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Less Foundry Iron Being Melted

Per Capita Consumption Now Smaller Than Before
the War—Unbalanced Output and Consump-
tion, Not Excess Production, the Cause

BY LLOYD H. ATKINSON*

IT is generally recognized that conditions in the iron and steel trade are not what they should be and that, relatively, they are not so good as in other major industries. Particularly is this noticeable in foundry iron. General opinion attributes this to an over-production in this grade of iron.

In seeking the true cause and if possible to suggest a remedy, the writer has interviewed a number of the leading merchant producers of pig iron, as well as sales agents, and a number of consumers. He also has compiled statistics covering production, consumption and prices in the past 15 years, using the statistics of the American Iron and Steel Institute for tonnages and THE IRON AGE for prices. Without presenting tabulations in detail, the study involved the compilation of high, low and average prices by months on foundry iron at Philadelphia, foundry iron at Buffalo and the composite pig iron price published by THE IRON AGE, representing the mean between Valley basic and the average of Chicago, Birmingham and Philadelphia foundry iron.

In this tabulation it is noted that the abnormal prices occasioned by the World War were not in evidence until November and December of 1915. Likewise the purchasing power of the dollar did not begin to decline until 1916. For this reason the years 1911 to 1915 inclusive are considered as pre-war years and it is reasonable to assume that average prices and average production for these years represent the normal for that period. The years 1916 to 1920 inclusive were considered as war years because the war inflation reached its peak in 1920. The years from 1921 to 1924 inclusive were used to obtain post-war

PER capita consumption of foundry iron smaller now than before the war.

Per capita consumption of steel larger now than before the war.

Fluctuations in output of foundry iron five times as great since the war as in the pre-war period; in prices, twice as great.

Normal average of production and consumption of foundry iron, based on present population, should be about 5,600,000 tons per year.

Unbalanced production and consumption must be corrected as well as wide changes in prices.

Lack of balance between production and consumption, not excess of manufacturing capacity, is the cause.

Pig iron warrants suggested as a remedy.

averages under both heads.

In considering per capita production and consumption the statistics of population compiled by the National Bureau of Economic Research were used and averaged for the periods considered.

It should be kept in mind that this study applies to foundry iron alone, the figures on steel being given to determine to what extent, if any, an increased consumption of steel affected the foundry iron business.

The war period, 1916 to 1920, is eliminated from consideration as being abnormal. It will be noted that per capita consumption of iron and steel has increased 21 lb. per capita in the past 15 years, rep-

resented by an increase in steel consumption of 38 lb. and a decrease in foundry iron consumption of 17 lb.

Output Per Capita of Foundry Iron and Steel

Period	Average Population	Steel, Lb. per Capita	Foundry Iron, Lb. per Capita	Combined, Lb. per Capita
1911-15	96,238,000	459	112	771
1916-20	103,546,000	906	116	1,021
1921-24	109,980,000	697	95	792
1925	114,311,000	...	...	...

The tendency to substitute steel for cast iron has been emphasized by the relatively higher prices of gray iron castings, due far more to labor costs in foundries than to unreasonably high prices for foundry iron. When this condition is corrected and labor to a degree undergoes the same readjustment as has taken place in the metallic products of labor, it is believed the per capita consumption of foundry iron will return to the pre-war level or exceed it. If this

*Crocker Brothers, New York.

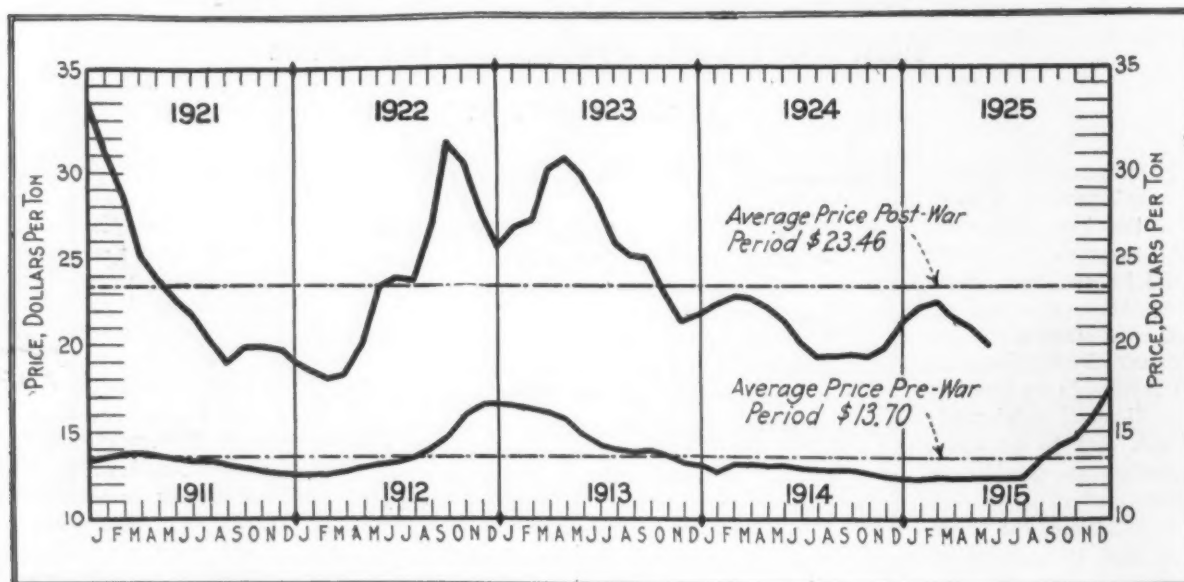
assumption is correct, the normal average of production and consumption of foundry pig iron, based on our present population, should be about 5,600,000 tons per annum.

The production of foundry iron in the United States for the five pre-war years amounted to 24,140,309 tons, or an average of 4,828,000 tons per annum. In this period the maximum production was reached in 1913 with 5,220,000 tons or 8 per cent above the average for the period. The minimum production in any one year was in 1911, with 4,468,000 tons or about 7½ per cent below the average.

Prices according to the composite for pig iron (THE IRON AGE, Jan. 7, page 72) range from a minimum of \$12.39 at the low point in 1914 to \$17.34 in December of 1915. The average for the entire period shows a composite iron price of \$13.70. Foundry iron at Buffalo ranged from \$12.08 to \$17.77, with an average of \$14.08. Foundry iron at Philadelphia ranged from \$14.25 to \$19.05 with an average of \$15.55.

production is the cause of the difficulty. It seems to show rather that it is unbalanced production and consumption. The averages of post-war and pre-war periods of total annual tonnage are fairly close together and the known needs of our present population would seem to indicate that a regular production of over 5,000,000 tons per annum could be absorbed. As compared with the true value or purchasing power of the dollar, the average of post-war prices on pig iron is relatively lower than most other commodities on this basis, as the average, \$23.46, when corrected to the true value of the dollar, becomes \$14.40 per ton, as compared with \$13.70 the pre-war average.

The chart, showing fluctuations by months, illustrates more clearly the wide and unnecessary fluctuations in pig iron prices. THE IRON AGE composite price of pig iron was used in this chart instead of taking the average price of Eastern and Buffalo iron alone, for the reason that it more truly represents general conditions throughout the United States, al-



Pig Iron Price Movements in Pre-War and Post-War Periods Compared, Based on the Composite Price of THE IRON AGE. Pre-war period, 5 years, 1911 to 1915. Post-war period, 4 years 5 months, 1921, through May, 1925

Fluctuation in prices based on the composite ranged from 10 per cent below the average to 26 per cent above, or if December, 1915, be excluded, to 21 per cent above.

For the post-war four-year period a total of 18,637,000 tons of foundry iron was produced, or an average of 4,659,250 tons per annum. Maximum production was reached in 1923 with 6,470,000 tons and minimum in 1921 with 2,568,000 tons.

Prices showed a correspondingly wide fluctuation, ranging according to the composite price from a low of \$18.14 in 1922 to a high of \$31.78 in the same year. Corresponding figures for Buffalo iron were a low of \$13.31 and a high of \$33.88 with an average of \$23.76, and for Philadelphia iron a low of \$20.64, a high of \$34.88 and an average of \$25.87.

Production, it will be noted, exceeded the average figures by 39 per cent in 1923 and at the low point of 1921 was 45 per cent below the average. The fluctuations therefore were five times as great in the post-war period as in the pre-war, while price ranges were twice as great.

Such a condition is unsatisfactory alike to the producers and consumers of pig iron. Regular operation of furnaces becomes impossible. The condition of the foundryman is equally bad, since his purchases must be made on a market which is constantly moving to extremes.

The foregoing figures do not indicate that over-

though it is admitted that the elimination of Valley basic from this average would tend to accentuate the peaks and depressions and render the point which the writer has been endeavoring to develop more striking. It will be observed that in general the pre-war and post-war periods follow parallel lines above and below the average, but to restore prosperity to the foundry iron trade and to the foundry trade as well, the peaks and depressions must return to a more natural curve.

To bring about this correction, in view of the present attitude toward the legality of trade association activities, is difficult. One producer is not likely to curtail his output for the sake of stability when a competitor may reap all the benefit. Better methods of selling and a reduction in the number of firms competing for the business would tend to improve the situation. It is fair to conclude that there is not either a serious over-production or over-producing capacity of foundry iron. What is needed is a more uniform rate of operation and more regular distribution, both of which logically would follow if prices were more stable.

Pig Iron Warrant Market as Remedy

The establishment of a real warrant market and a recognition by banks of the excellent character of pig iron warrants as collateral would tend to prevent flooding the market with distress iron in periods of declining activity. There would be a further advantage

to the consumers of pig iron by permitting them to hedge by the purchase or sale of future warrants, as is done in the textile and milling industries. Any tendency to create a large speculative following in the warrant market would naturally be curbed by the fact that the great majority of iron produced always moves directly from furnace to consumer through the regular selling agents and in practice it is likely that little iron would be put in warrant except by blast furnaces themselves or by their agents.

The proper recognition by pig iron producers of the rights of competitors and customers would tend to create the same degree of stability in foundry iron which exists in most steel products. Cooperation within the law is possible and the results would be highly beneficial to this particular section of the iron industry.

It is hoped that this article will lead to some discussion, as an exchange of ideas among those interested will perhaps result in a solution of the problem.

MILL ELECTRIFICATION

Two Merchant Mills, a Rod Mill and a Rail Mill to Have Motors

Change-over from steam to electric drive is to be made by the Colorado Fuel & Iron Co. at its Minnequa Works, Pueblo, Colo. This plant, the largest steel mill in the West, has completed arrangements for electric power, generated on the premises, for its rolling mills. The new power house will use powdered fuel and waste-gas fired boilers which will provide steam at 300 lb. pressure and 180 deg. Fahr. superheat. The electrical equipment will be furnished by the General Electric Co.

Two 10,000-kw. turbine generators—the prime movers—will furnish alternating current at 6600 volts. Complete electrical equipment will be furnished for driving a rod mill, a 10-in. merchant mill, a 14-in. merchant mill and a rail mill.

Details of the New Drives

The rod mill has 18 stands of rolls. The first six stands will be driven by a 3000-hp. 450 r.p.m. motor; the seventh stand, by a 1000-hp. 720 r.p.m. motor; the eighth and ninth stands, by a 1000-hp. 720 r.p.m. motor; stands Nos. 10 to 15, inclusive, by a 3000-hp. 450 r.p.m. motor, and the remaining stands will be driven by a 1500-hp. motor rated at 450 to 550 r.p.m. Both the 3000 and the 1000-hp. units will be a. c. machines, while

the 1500-hp. motor will use d. c. furnished by a 1600-kw. synchronous converter, the power for the converter being stepped down from the main lines by a 1680-kva. transformer.

Each mill will be equipped with switchboard and necessary control. The 10-in. merchant mill will be driven by two direct-current motors, both of which will be direct connected. Current for these machines will be furnished by a 1600-kw. synchronous converter with a 1680-kva. transformer for stepping down the voltage from the main power lines. One 300-hp. 200 to 300 r.p.m. motor will drive a single stand of 14-in. rolls and a 1500-hp. 200 to 300 r.p.m. motor will drive six stands of 10-in. rolls.

Two direct current motors will drive the 14-in. merchant mill. As in the case of the 10-in. mill, the power from the main line will be stepped down by a 1680-kva. transformer and will then be changed to direct current by a 1600-kw. converter. One 1500-hp. 100 to 150 r.p.m. motor will be direct connected to stands Nos. 5 and 6, and will drive the first four stands through a rope transmission. A 750-hp. 150 to 250 r.p.m. motor will drive stands Nos. 7 to 9.

The roughing stand of the rail mill will be driven by a 2000-hp. 450 r.p.m. induction motor; a 3000-hp. induction motor of the same speed will drive the intermediate stand and a 1200-hp. 450 r.p.m. induction motor will drive the finishing stand, each motor being geared to the mill through the usual double herringbone reducing gear.

Develops Formulas for Computing Economy of New Equipment

Simple equations for determining the economies of an installation of labor-saving equipment have been developed by James A. Shepard, vice president, Shepard Electric Crane & Hoist Co., Montour Falls, N. Y., and G. E. Hagemann, Associate Editor of *Management and Administration*, New York. These formulas were presented in a paper on the subject at the material handling session of the spring meeting of the American Society of Mechanical Engineers, held in Milwaukee, May 18 to 21. They show the maximum investment which will earn simple interest; the yearly cost to maintain the mechanical equipment ready for operation and the yearly profit, in excess of simple interest, from the operation of the equipment. They also show the yearly profit from operation in per cent on investment and the years required for the complete amortization of investment out of earnings. The method of applying the formulas, the evaluation of their various factors and the correct assumption of bases were explained in detail.

Another paper at this session, presented by George Langford, Jr., Belden Mfg. Co., Chicago, was on "An Application of the Formulas for Computing Economies of Labor Saving Equipment." It applied specifically to the purchase and operation of an electric industrial truck in place of hand lift trucks. A third paper was on the "Economic Efficiency of the Full Automatic Turret Lathe in Comparison with the Semi-Automatic Turret Lathe," presented by R. J. Wadd, chief engineer, Shepard Electric Crane & Hoist Co. In this the results arising from changes in the machine tool equipment are outlined, the analysis being made with the aid of the formulas developed by the materials handling com-

mittee. The economic analysis of a new paver employing the same formulas was given in a paper on "Labor-Saving Equipment in Road Construction" by E. H. Lichtenberg, chief engineer, Koehring Co., Milwaukee, and James A. Shepard, vice president, Shepard Electric Crane & Hoist Co. H. V. Coes, Belden Mfg. Co., Chicago, was chairman of the session.

One Iroquois Blast Furnace Being Dismantled

The No. 1 Iroquois blast furnace at South Chicago, Ill., is being dismantled by the Youngstown Sheet & Tube Co., which came into possession of the Iroquois furnaces when it purchased the Steel & Tube Co. of America about two years ago. The No. 1 stack was built in 1891 and has been idle for several years, having last been operated under lease by the Miami Metals Co. for the production of ferroalloys. The No. 2 Iroquois furnace, constructed in 1901, has also been inactive for a number of years, but will be held in reserve until such a time when merchant pig iron demand warrants relighting it. It can be put in shape for production with a relatively small expenditure for alterations and repairs. There are three other Iroquois stacks, Nos. 3, 4 and 5, two of which are now in blast. These are all large furnaces.

April production of electricity by the use of water power established a new high record at 67,400,000 kwhr. per day, according to the United States Geological Survey. This total is 39.2 per cent of the total output of 172,000,000 kwhr. per day, by all public utility plants, in April.

Large Diameter Centrifugal Pipe

New British Process for 36-In. Castings—Annealing Found Unnecessary—Principles of the Hurst-Ball and Other Systems

BY J. E. HURST*

THE production of cylindrical castings from small diameter short length castings up to 12 ft. long spigot and socket water pipes by the process of spinning the molten metal in rapidly rotating dies, has come to be known as the centrifugal casting process and is now familiar to most engineers in this and other countries. The recent development of the Hurst-Ball centrifugal casting system which has been operated by Centrifugal Castings, Ltd., Kilmarnock, during the past four years on the production of castings for piston ring drums and cylinder liners is of particular interest.

This development consists of the application of the Hurst-Ball system to the production of large diameter spigot and socket pipes. Fig. 1 shows a group of 36-in. diameter spigot and socket pipes cast by this process and represents, in the author's belief, the largest single

temperatures previous and subsequent to these temperatures of the commencement of graphitization are of practically no importance in determining the presence of the chilled structure. On the one side of quick rate of cooling, cast iron is undoubtedly very sensitive to the effect of small changes in the rate of cooling from the point of view of the formation of graphite, and there is undoubtedly a critical rate of cooling, above or below which, graphite is or is not produced in a cast iron of any given composition.

Experiment has demonstrated in simple cylindrical castings of similar radial thicknesses that metal dies can be designed of such dimensions that the mean temperature attained by the die, or the surface temperature of the die and the temperature gradient across the radial thickness of the die, can be maintained within suitable limits when operating on the continu-

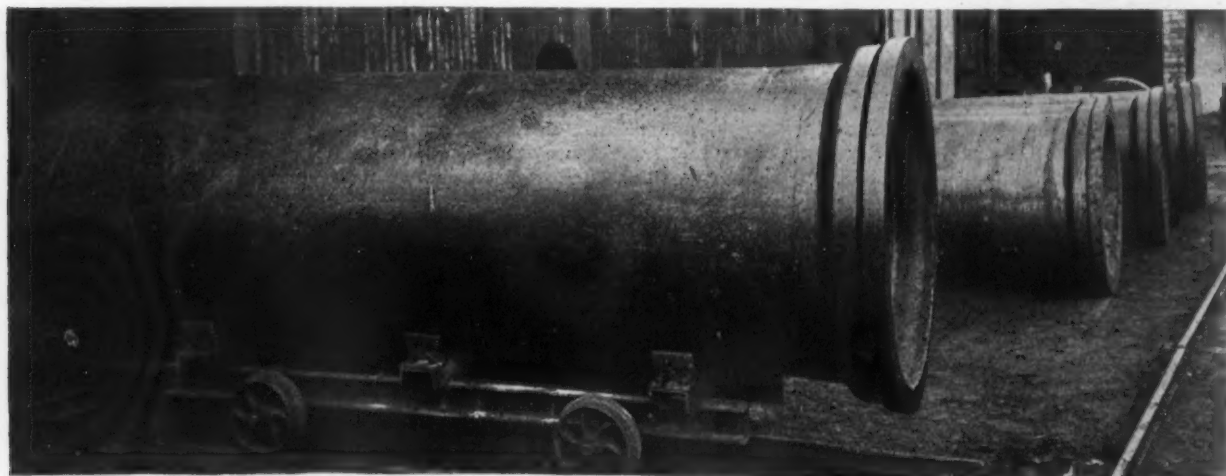


Fig. 1—Some of the 36-Inch Centrifugal Cast Iron Pipe Produced by the New Process at the Scottish Plant

casting yet produced by any process of centrifugal casting.

The special feature of this system of casting is the production of castings directly gray and machinable without the necessity of annealing, and these features are protected by a series of patents. The pipes produced by the Centrifugal Castings Company's machine are of a direct soft gray cast iron, identical with the thousands of smaller castings which have been commercially produced by this company for piston ring drums and similar purposes with a guaranteed minimum machining speed of 60 ft. per min.

The presence or absence of the hard white chilled iron structure in cast iron is due to the suppression of the characteristic phenomena of cast iron—the formation of graphite. It is now well known to most metallurgists that the formation of graphite in cast iron takes place after the final solidification of the iron at a temperature of as low as 50 deg. below this final solidification point.

The extent of the graphite formation in a cast iron of any given composition depends upon the rate of cooling at these ranges of temperature in which the graphite commences to form. The rates of cooling at

ous production of such castings at economical rates of output. The suitable limits of temperature gradient and surface temperatures of these dies have been determined by practical experiment for the conditions of maintaining rates of cooling in the castings sufficient to prevent chill and at the same time to obviate the attainment of unduly steep temperature gradients across the dies under which the dies are caused to deteriorate rapidly and pinhole defects be produced in the castings. These conditions have been determined for both water-cooled and atmospherically cooled dies. The die designed for the production of the large castings in Fig. 1 was arranged for normal atmospheric cooling.

From the early days of centrifugal casting it has been recognized that in the production of long castings of even thickness, the introduction of the molten metal must be effectively controlled. It is apparent from the early patents, and experiment confirms the fact, that the introduction of molten metal in a long flat continuous stream of approximately the same length of the casting is difficult to control from the point of view of the ultimate even thickness of the pipe. This is largely due to the rapid rate at which the metal solidifies.

If the molten metal remained liquid for a consider-

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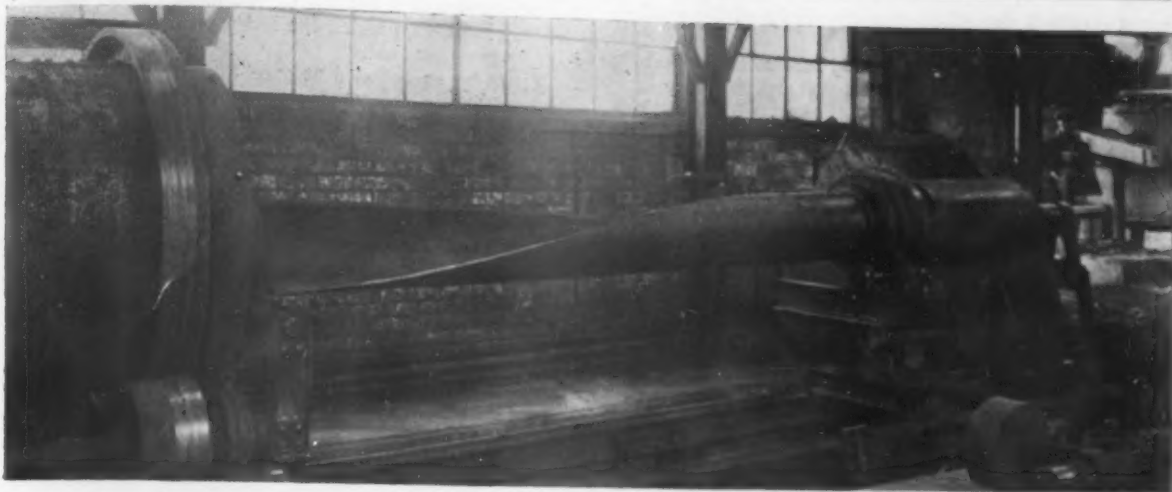


Fig. 4—The Pourer Arrangement and a Portion of the Mold of the Experimental Machine Used in Making the Large Pipe in Fig. 1

able time, the distribution of the pressure, due to the centrifugal action throughout the liquid metal, would ultimately result in the metal's taking up a position in which all the forces are in equilibrium and a casting with a parallel bore and of even thickness would result. In practice however the molten metal solidifies so rapidly that, in long castings, there is rarely time for sufficient longitudinal movement of the metal in the liquid state to smooth out any irregularities in the distribution of the metal surface of the die.

These conditions have been met in various ingenious ways by different inventors. To quote two cases as illustrations, Joseph Whitley in 1884, when dealing with castings 9 ft. in length, utilized a troughlike pourer of the type indicated in the sketch, Fig. 2. This trough was equipped with a series of nozzles or ingates spaced at even distances, in this particular case 6 in. apart. A reciprocating motion of an amplitude of 3 in. was given to this trough while tilting. The effect of this is to introduce the molten metal on to the rotating mold surface in a series of continuous streams of narrow width.

The continued reciprocating motion of these streams, applied to the rotating die, effectively distributes the metal in a number of spirally related subdivisions according to the number of nozzles or ingates in the trough. Each subdivision consists of a series of interlacing spirals, the slight longitudinal movement of which was probably effective in bringing about an even distribution of the molten metal.

A further interesting device was adopted by Lane, 1891, in which the molten metal was introduced into the die in the form of a continuous stream of narrow

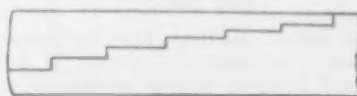
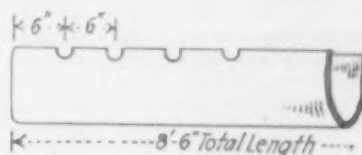


Fig. 2 (Upper)—The Trough-Like Pourer Used in One of the Earlier Types of Machines

Fig. 3 (Lower)—Original Idea for the Design of the Hurst-Ball Pourer

width. A rotary movement was applied to the stream and at the same time the mold was continuously withdrawn over the rotating spout. The effect of this relative longitudinal movement between the mold and



Fig. 5—One of the Large Pipes in Position Just After Being Taken From the Mold

pourer spout is such that the stream of molten metal is continuously deposited over the whole of the surface of the rotating mold.

The now well known Delavaud system is apparently of a somewhat similar nature, but in this case the molten metal is admitted into the rotating die down a stationary pouring channel, equipped with a specially shaped nozzle or lip outlet.

The Hurst-Ball type of pourer secures a somewhat similar result in an entirely different manner. This pourer arrangement is a development of the tilting trough type of pourer which has been used in many cases. These tilting troughs were equipped with a horizontal weir edge of approximately the length of the casting to be produced. This type of trough was arranged to be tilted by partially rotating about its axis in such a manner that the metal was deposited on the surface of the rotating die in a continuous sheet of approximately equivalent length to that of the casting being produced.

The original idea in the development of the Hurst-Ball pourer was to form this weir edge in a series of steps varying in height along the length of the trough, as shown in Fig. 3. On partial rotation of this tilting trough, the molten metal first flows over the lowest edge and successively over the edges of higher levels as the rotation is continued until the whole of the metal is deposited over the surface of the die in a continuous series of annular rings of a width depending upon the length of each "step like" weir edge. By allowing the molten metal to flow down this tilting trough at a constant rate, the molten metal is deposited evenly over the whole surface of the rotating mold. The reduction in length of the step-like weir edges results in the production of a weir edge which is more or less a portion of a helix.

This is illustrated in Fig. 4 showing the pourer arrangement and a portion of the mold of the experimental machine on which the large pipes illustrated in Fig. 1 were produced.

It will be appreciated at once that the partial rotation, or the tilting, of this trough through the complete angle subtended at the axis of the pourer by the difference in level between the two ends of the weir edge will result in the continuous deposition of the molten metal in a complete series of annular rings of narrow width depending upon the velocity of the molten metal supplied. By supplying the molten metal at a constant quantity per unit time to the tilting trough, the production of a casting of even thickness and parallel bore is claimed.

These are the two principal features of the Hurst-Ball system which has now been in effective operation over a period of four years on the production of many forms of centrifugal castings such as piston ring drums, cylinder liners, rolls and the like, and has now been adapted to pipes. Fig. 5 shows one of the large pipes in position immediately after withdrawal from the mold.

It will be appreciated that the principles involved in the Hurst-Ball system, as above described, enable the casting machines to be designed of a comparatively simple nature from a mechanical point of view.

The general design and layout of the machine lends itself to the adoption of comparatively simple and easy methods of extracting and handling such large castings. The production of castings free from hard chilled surfaces with the consequent elimination of the necessity for annealing is pointed to as of special importance in the case of large diameter pipes which would obviously involve a very large and expensive annealing plant.

Continuous Scoreboard Promotes Regard for Safety

A prime factor in the effort to secure freedom from accidents in industrial plants is to maintain alertness and interest among employees. Ordinary measures, such as warning signs, slogans, even the use of safety devices, depend to a large extent upon avoiding the effects of familiarity. Accustomed objects soon

figure transferred to the monthly record, the sum of which will be the record of the year.

The scoreboard has proved to have something of sporting interest. Workers get to discussing it, even to betting on it. The belief of the mill management as well as of observers generally is that the effect is to prolong the period of a perfect record. The idea is being adapted to other plants.



Accident "Scoreboard" Keeps Safety Ideas Before Workers

blend into the general aspect of things. Constant mental stimulation is needed.

In Worcester, Mass., and the towns and other cities of central Massachusetts, the Worcester County Safety Council has been conducting for several years a contest between firms, most of them in the metal trades, where the goal of success is freedom from lost-time accidents. Attention has been concentrated on methods of keeping workers interested.

One idea, which has attracted much notice and has met with success, is a continuous scoreboard, placed at a point at the works of the Whittall Associates, carpet manufacturers, where nearly all of the more than 1200 men and women employees pass four times daily, as they enter and leave the mill.

Each day a metal number tag is hung telling of the record of the day before. If any employee has been hurt to an extent necessitating absence from work for a day it counts as an accident. No accident brings forth a zero. The total of each week is posted, and at the end of the month that period is totalled and the

Foremen at Foundrymen's Convention

A new departure in convention features for the Syracuse meeting of the American Foundrymen's Association, Oct. 5 to 9, will be the holding of round table discussions on brass foundry problems. All the brass foundry foremen and superintendents are invited to attend the luncheon gathering to be held Tuesday noon, Oct. 6.

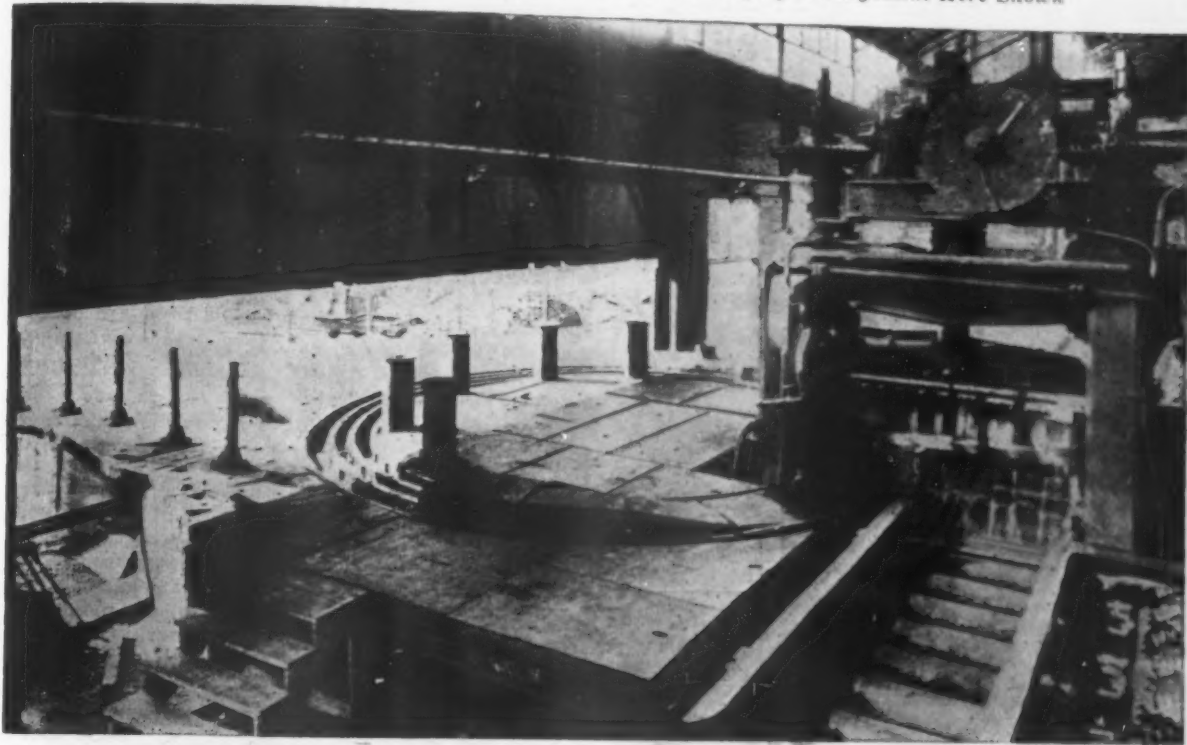
After the luncheon an informal discussion of shop problems will be in order. No prepared papers will be read but short discussions will be called for by the chairman.

The program committee realizes that some of the past meetings on brass foundry topics have been of little interest to practical brass foundrymen, because the subjects discussed were mostly devoted to the metallurgical phase of the industry. As the meeting is planned, the practical brass foundryman will have a chance to air his views on topics close to the shopman's interest.

Volume of Construction Work Makes New High Record

All records for volume of construction work under way in the United States during a single month were shattered in May, according to statistics compiled by the Associated General Contractors of America. The May volume was 26 per cent greater than that of April, reflecting the great volume of contracts awarded during the two preceding months. The amount of construction activity in the first five months of this year is being taken as an indication that 1925 will set a new twelve-month record.

Most Unusual, in a Blooming Mill, Is the Automatic Looping Arrangement Here Shown



LOOPING BLOOMING MILL*

Unusual Type, Over 20 Years Old, Designed for Flexibility in Operation

FIG. 1 shows, in plan view, the main features of a complete 35-in. reversing blooming mill which is a variation of the usual type of reversing bloomer. This mill, built in 1902 at the Grand Crossing works of the Interstate Steel Co., is of the usual construction of that day except for the circular repeating attachment which enables the mill to roll to smaller sizes than could be successfully handled in an ordinary mill depending upon the usual type of manipulator.

A mill of this type, employing the looping principle, is intended for plants not having a large tonnage demand and where it may not be economical to invest in subsequent mills to reduce a normal blooming mill product size down to smaller sizes. After the ingot has been rolled down to the smallest billet section that can be conveniently handled by the manipulator, it may be rolled on the continuous principle by sending it through single-pass, fixed sized holes in the rolls, by directing the billet through the circular repeaters and operating the mill continuously in one direction. The billet may be thus reduced from, say, a 4 x 4-in. section, the smallest ordinarily rolled on a blooming mill, to 1½ x 1½ in. or less.

By changing rolls and eliminating the looping device, a mill such as this can be quickly converted to comply with general blooming mill production practice. The photograph shows the same mill.

*Taken from a paper, "Blooming Mills and Blooming Mill Practice," read May 22, by W. H. Bailey, chief engineer Illinois Steel Co., Chicago, before the American Iron and Steel Institute, at New York.

A more recent installation of a mill of this kind is that in the Keystone Steel & Wire Co. plant at Peoria, Ill. Fig. 2 shows a set of rolls for this mill. This clearly illustrates the unusual range of product sizes that may be obtained on a looping blooming mill.

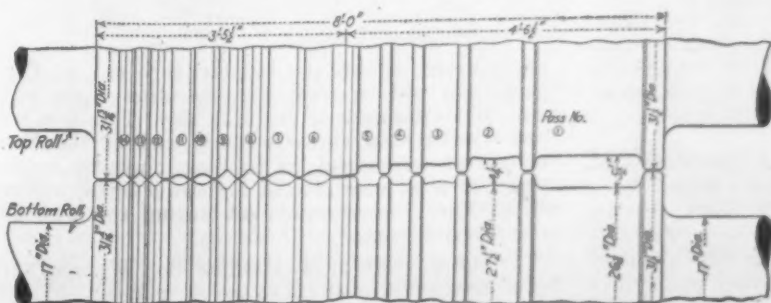
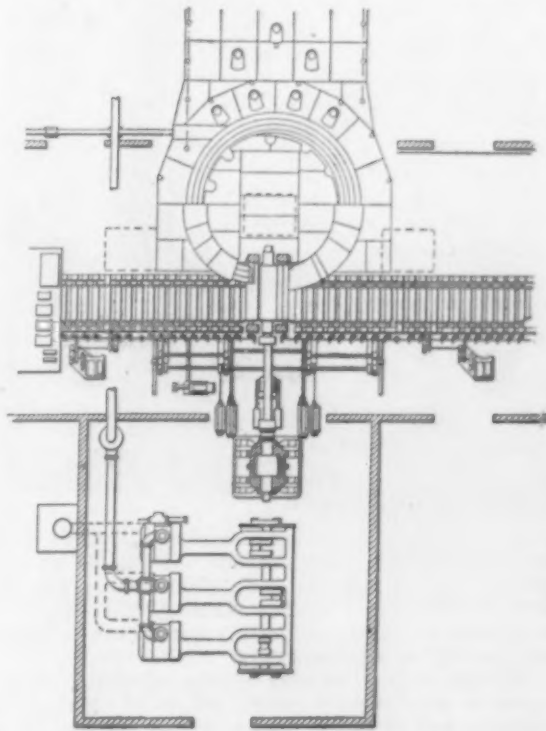
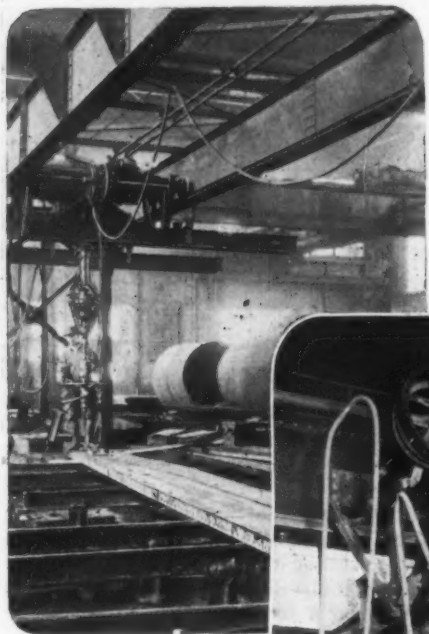


Fig. 1 (Above) Gives the Layout of the Mill Illustrated at Top. It is driven by a 3-cylinder engine

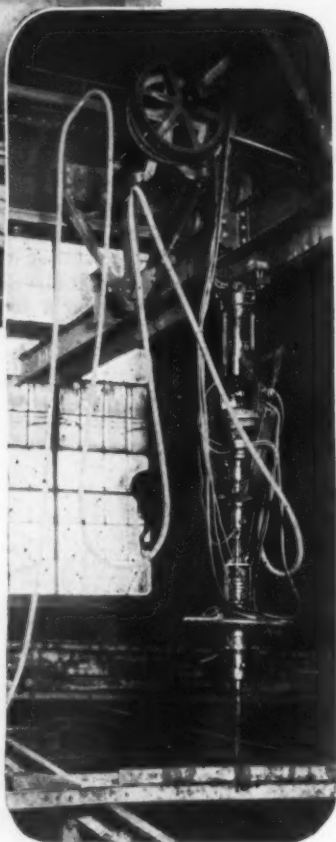
Fig. 2 (Left) Indicates Blooming Passes at Right and Looping Passes at Left of the Rolls

Machine Arranged for Rapid Reaming of Punched Holes

The reaming, in car parts, of 500 to 900 holes an hour with one operator is claimed for the machine illustrated, which has been placed on the market recently by the American Car & Foundry Co., 165 Broadway, New York. The machine is employed as standard equipment in all of the company's plants on both freight and passenger car work, and is said to be especially adapted for reaming in the general assembly as well



Reaming Machine Developed by the American Car & Foundry Co., to Reduce the Cost of Reaming Car Parts. One operator controls the machine. Various designs of travelers, to suit different conditions of work, may be used



as the sub-assemblies of car construction, such as truck and body bolsters, car sides, etc. It can be adapted also for use in manufacturing plants where punched holes in steel parts require reaming, after assembly and before riveting, accurate reaming and low cost being advantages claimed.

Placing of the machine on the market is in accordance with the company's policy of offering the railroads and other car manufacturers the benefits of labor-saving devices that it has developed and used, a policy which was adopted several years ago when its rivet heaters were brought out. The vertical and horizontal reaming devices now offered, which are claimed to save from two to three men in each reaming position, will be followed by improved attachments for precision punching.

The hand reaming machines used previously required from one to three men to operate them. One-man reamers were used only on light work, and as the work became heavier, heavier machines were required and more men needed. Two men were required to ream an underframe for a car, and they would have

to stand on the underframe, often in awkward positions, making it difficult to accurately center the reamers. The machine, although heavy for the men to handle, was not heavy enough to push the reamer through the work, which made it necessary for them to push down on the handles. Stalling of the reamer or breaking of the bit was a frequent occurrence, as two men pushing downward on a central point will seldom push with the same force. If the motor stalled it could be released only by withdrawing the reamer from the hole, and accidents occurred when the reamer bit was unable to rotate due to binding. Renewal of broken bits caused loss of time. Also with the old style reamers the wire had to be dragged along the floor and over the work, which tended to retard operations and to cause accidents. All of the disadvantages of the hand reaming machines are said to have been overcome in the new unit.

The machine requires only one operator, who may be trained in a short time. It is mounted on a traveler, which can be racked forward and backward by means of an electric motor controlled by a switch located on the hand wheel. The number of longitudinal holes that can be reamed is limited only by the length of the traveler runway. The trolley which carries the machine is equipped with ball bearings, so that a light push will cause horizontal movement along the traveler bridge. The width of the work that may be reamed is limited only by the length of the traveler bridge.

The electric motor for rotating the reamer bit has a brake test capacity of 6.9 hp., and will ream holes up to 1½ in. in diameter. Rotation of the armature is controlled by a contactor, which is operated automatically when the air cylinder, used for vertical control, is raised or lowered. The air valve for controlling the cylinder is operated by means of a clamp handle located on the hand wheel. A safety clutch between the reamer bit and the rotating armature shaft extension is released as soon as the operator's hands are removed from the hand wheel, thus stopping rotation of the reamer bit.

Various designs of travelers and other devices are employed in the company's shops to facilitate using the machine for the greatest production work of various types. The cost of maintenance is said to be low, consisting principally in renewal of motor brushes and in lubrication. All parts are accessible for inspection and repair and are interchangeable. The weight of the machine is sufficient to drive the reamer through the hole without additional pressure, which with the provision for accurate withdrawal of the bit from the reamed hole is said to practically eliminate breakage of bits. Reamer bits may be conveniently changed. The machine, although of rigid construction, has a certain amount of flexibility to permit the bit to enter holes not in alignment.

Youngstown Company to Build Tin Mills in Chicago District

President James A. Campbell announces that the Youngstown Sheet & Tube Co. will proceed with the installation of 24 tin mills at its Indiana Harbor, Ind., works, thus marking its entrance into the manufacture of tin plate. The company has also definitely decided to build its proposed seamless tube mill, authorized several months ago, at the East Youngstown plant, and an auxiliary, smaller mill of the same type, at Indiana Harbor. Contracts for equipment for both projects have been largely awarded.

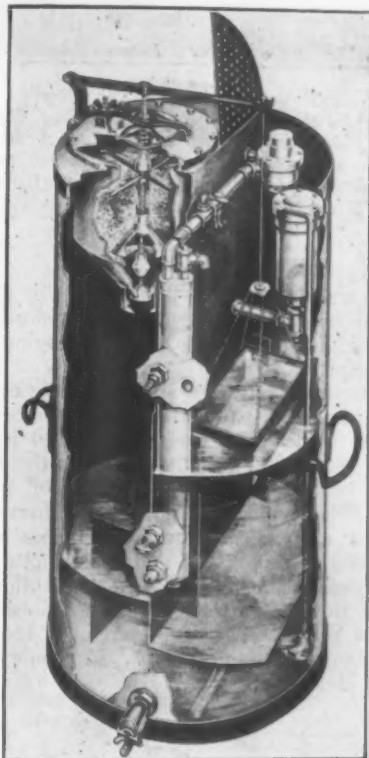
It is expected that the seamless tube mill at East Youngstown will be ready for operation early next year, and the tin mills by April 1, 1926. The tube mill plant will be built at the easterly end of the East Youngstown works, and the equipment will be housed in part in a building erected for the company's plate mill at East Youngstown, built during the war but never operated since.

The Aetna Foundry & Machine Co., Warren, will install mechanical doublers in the tin mills.

New Portable Acetylene Generator

A small generator for producing acetylene at low pressure for welding and cutting has been added to the line of the Oxweld Acetylene Co., 30 East Forty-second Street, New York. The new generator, which takes 35 lb. of carbide at one charge, can be transported readily from place to place. Empty, the generator weighs only 210 lb.

A new principle of feed control called a "heavier-than water" float, is employed. As shown in the illustration, a vertical partition, extending nearly to the bottom into a water seal, divides the generator shell. One side is gas tight and contains the carbide hopper at



Portable Generator Taking 35 Lb. of Carbide at One Charge. Feed control by a "heavier than water" float is a new feature

the top. The upper part of the other side contains gas regulating and protective devices, and an automatic carbide feed control. Generation of the first acetylene causes water to rise on this side of the partition high enough nearly to submerge a pan full of water, hung to a control lever. This pan normally acts as a weight acting counter to a spring, but as the water rises about it, its apparent weight is diminished and the carbide hopper valve is closed by the action of the spring. As acetylene is drawn off, water rises in the gas compartment and correspondingly lowers under the float, relieves some of the buoyancy under the water pan, which, gathering weight with the receding water, depresses the spring and allows a small amount of carbide to drop into the generator, and restore equilibrium conditions.

Two pamphlets on Simplified Practice, just issued by the United States Department of Commerce, cover respectively steel lockers in single and double tier and steel reinforcing bars. The number of sizes of double tier lockers retained is 5, while there are 12 sizes of single tier lockers. In reinforcing bars the number of sizes retained is 11. These pamphlets may be obtained from the Superintendent of Documents, Government Printing Office, Washington, at 5c. each.

The E. L. Essley Machinery Co. has been given the exclusive agency contract with the Colburn Machine Tool Division of the Consolidated Machine Tool Corporation, for the sale of its line of vertical boring and turning mills and heavy duty drilling machines in the so-called Chicago machine tool territory.

Institute of Metals to Meet in Glasgow

The annual autumn meeting of the Institute of Metals will be held in Glasgow, Scotland, Sept. 1 to 3. This is the first one to be held in that city in 15 years. In the evening of Sept. 1 the fourth annual autumn lecture will be delivered by Sir John Dewrance, vice-president. In the morning of Sept. 2 papers will be read and discussed, after which a luncheon will be served by the reception committee and members of the Scottish local section. Several of the leading engineering works will be visited that afternoon and in the evening there will be a reception by the Lord Provost and magistrates in the Municipal Building. Papers will be presented for discussion in the morning of Sept. 3 with an excursion in the afternoon down the River Clyde for the purpose of viewing the industrial section of the river.

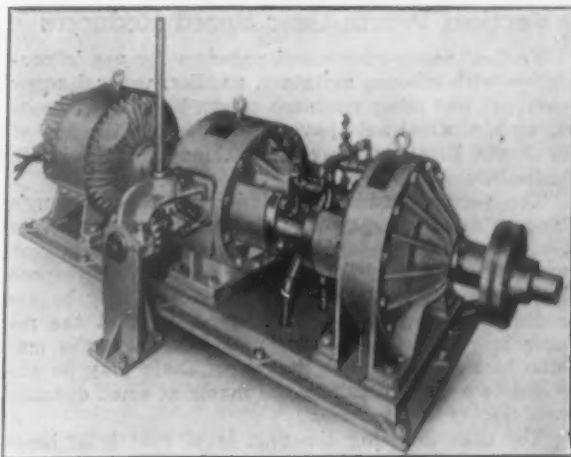
Hydraulic Speed Reduction Unit

Hydraulic pressure in place of gears is used in the speed reduction unit, illustrated, which was built by the American Engineering Co., of Philadelphia. A range of speeds is obtained simply by changing the control that regulates the stroke of the plungers in a Hele-Shaw pump, this being done while the machine is in operation without stopping the direct-connected electric motor. The variable discharge from the pump governs the speed of a Hele-Shaw hydraulic motor, which is directly connected to the machine to be driven.

The unit shown was built recently to operate the anchor windlass on a yacht, but its makers believe that it will find a wide field in driving heavy machinery that operates against variable resistances, as the ratio of speed reduction can be changed instantly to overcome any unusual resistance that may be encountered.

Oil is used as the hydraulic medium, making the unit self-lubricating. The unit illustrated was designed to give a maximum reduction of 850 to 1.

A cylinder body with radial cylinders rotates at constant speed around a central cylindrical valve through which the fluid passes to and from the pump. Plungers with slippers fastened to their ends are forced in and out as the slippers travel around in a groove in an outer floating ring. By shifting the position of this



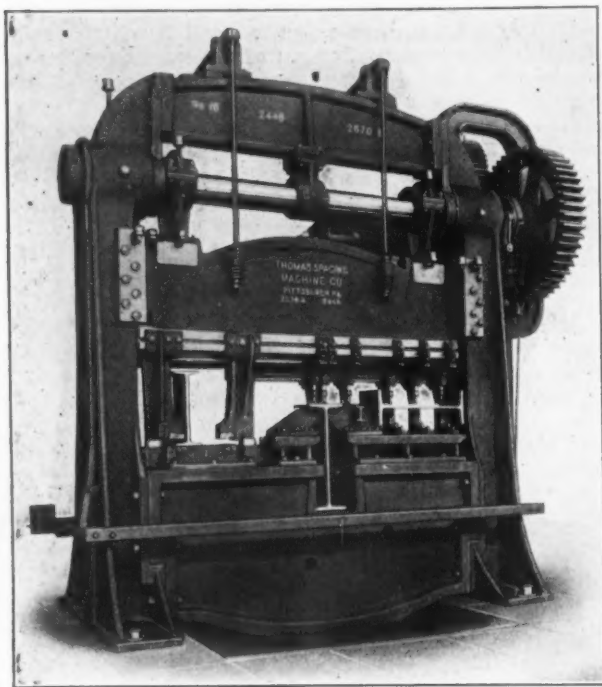
Speed Reduction Unit Employing Hydraulic Pressure in Place of Gears. High efficiency, silent operation and flexibility of control are claimed

ring the stroke of the plungers and, consequently, the amount of fluid discharged from the pump, is regulated from zero to a maximum, giving an infinite range of speeds to any mechanism that is driven by the pump. This regulation of the plunger stroke is accomplished while the pump is running and without changing its speed of rotation. This variable discharge drives the Hele-Shaw hydraulic motor at corresponding speeds.

The National Association of Brass Manufacturers will hold a general meeting at the Edgewater Beach Hotel, Chicago, June 11. W. M. Webster, City Hall Square Building, Chicago, is commissioner of the association.

Multiple Punch Arranged to Save Handling of Material

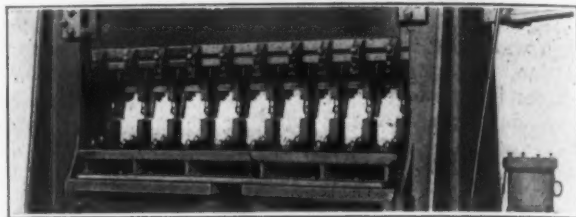
The multiple punching machine illustrated is designed to perform the three operations of coping and punching the flanges and punching the webs of beams and channels consecutively without setting the material



down or rehandling. In the fabrication of structural steel, one of the largest items of expense is the handling of material and the greatest savings that can be effected is by the elimination or the expediting of the handling of material. For the handling of beams, the usual practice is to cope on one machine and punch

on another, necessitating several rehandlings of the material.

This machine is a standard straight side multiple punch equipped with the necessary tools, side by side, to perform all the operations. Beams up to 24-in. may be coped and punched, and small auxiliary tools are provided for punching the flanges of beams or channels



Multiple Punch Arranged for Coping and for Punching Flanges and Webs of Beams and Channels, at One Handling. Arrangement of tools for punching plates, with simplicity of setting tools a feature, is shown above

from 6-in. and under. For punching both flanges and webs a special table with spacing attachment can be provided without interfering with the coping or notching operations.

The close-up illustration shows the arrangement of the standard punching tools for punching plates, angles and similar work, these tools being held by a single bolt, which permits of readily changing the position of the punch holders. This arrangement of the tools is patented. The clutch is operated by means of foot treadle and also solenoid with push button control. This machine was designed and manufactured by the Thomas Spacing Machine Co., Fulton Building, Pittsburgh, for Heyl & Patterson, Inc., Pittsburgh, for its North Side Works. The combination of tools was designed in collaboration with A. R. Conley, superintendent of Heyl & Patterson.

Vertical Worm-Gear Speed Reducers

Vertical worm-gear speed reducers for use in connection with mixers, agitators, paddles, vertical screw conveyors and other machines driven by shafts operating on a vertical axis have been added to the line of the Foote Brothers Gear & Machine Co., 215 North Curtis Street, Chicago.

The vertical reducer is similar to the company's standard units, except that it is designed to lay on its side with the driving shaft at the right, the worm gear revolving in a horizontal plane and the slow speed shaft in a vertical position. This shaft may be extended either upward or downward, so that the reducer may be located either under or above the machine to be driven, and the worm shaft may be extended to permit installing the motor at some distance from the driven machine.

The case inclosing the unit is of cast iron, heat-treated to prevent flaking, and has a removable top cover. The base is cast integral with the case to pro-

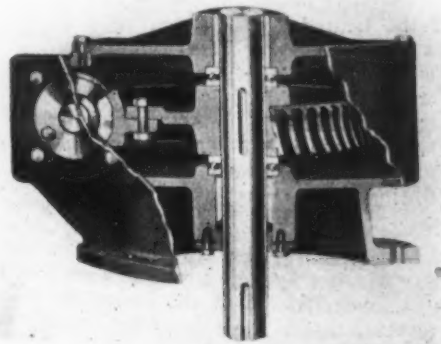
vide suitable mounting either on the floor or hanging from the ceiling. Removable end plugs with oil-tight stuffing glands are provided on each end of the worm, which is made of alloy steel and has large ball thrust bearings at both ends. The worm gear can be furnished either of semi-steel or bronze with cast iron center as desired, the bronze gear being recommended for continuous service. The worm gear shaft rotates in large phosphor bearings, and the ball thrust bearings are provided at each end of the shaft.

Compactness is a feature, and the units being fully inclosed are not subject to the wear and deterioration from dust and grit, acid and alkaline fumes in the atmosphere, conditions often experienced in chemical and other manufacturing plants where they are installed. They are self-lubricating, requiring little attention, excepting the occasional replacement of the oil.

A variety of sizes and ratios, ranging in capacity from fractional horsepower up to 100 hp. and reduction ratios from 7 to 1 up to 120 to 1, are available.



Vertical Worm-Gear Speed Reducer. The slow speed shaft may be extended upward or downward to suit conditions, and the worm shaft may be extended to permit installing the motor at a distance



FOUNDRY MANAGEMENT

Staff Organization of Steel Casting Plants Discussed—Chief Inspector's Place Important

An interesting outline of the staff organization necessary in operating a steel casting plant was presented by R. A. Bull, director of the Electric Steel Founders' Research Group, Chicago, in a paper on "Steel Foundry Management," read at the management session of the spring meeting of the American Society of Mechanical Engineers, held at the Hotel Pfister, Milwaukee, May 18 to 21.

Problems of general significance, rather than those details of management that justify marked differences in application according to the distinctive nature of the shop and its product, were discussed by Mr. Bull. In order to show the complex nature of the art of making steel castings, a section of the paper was devoted to a description of the technical and commercial divisions of the industry and the variety of trades and professions involved.

The sections making up the staff organization, the members of which report direct to the principal company executives or to related staff departments, were enumerated as sales, accounting, purchasing, cost, drafting, order or schedule, research, metallurgical, inspection, construction and service. Placing the chief inspector under the jurisdiction of a company executive was offered as a practical means of safeguarding against the exercise of poor judgment in the examination of castings for shipment, the company executive not being so readily influenced to form judgment from a restricted viewpoint as is the average superintendent. Placing the chief inspector under the sales manager, when the president or plant manager prefers not to direct this detail, was said to be frequently advisable. If the sales manager is, as he should be, properly qualified by knowledge of shop operations, it was believed that he is ideally fitted to supervise the inspection, especially as it is the sales manager who will be most handicapped in the future if the consumer receives unsatisfactory castings.

Having the order or schedule department under the joint direction of the sales and plant managers was said to be sometimes found most satisfactory. It was also said to be generally effective to have under the manager a works engineer to supervise construction and maintenance and to whom the master mechanic may suitably report. This engineer should give attention constantly to power conservation, and it was thought that he should have access to records showing the allocation of maintenance expense charged to individual items, all of which should be identified plainly in the shop. The line or shop departments to be headed by the shop superintendent were also discussed.

Expending effort in attempting to secure business that from an economic standpoint belongs elsewhere, either because of other material better suited to the job or because of the location of the producer with respect to the consumer, was stressed as not being a farsighted merchandising policy, although it may be wise to make a temporary exception in an emergency. Close cooperation between the sales and operating officials was considered essential to a good selling policy. The sales department, it was said, can usefully employ one or more men, much of whose time can be devoted to service. To be effective this sub-department must have the combined viewpoint of the operating and selling organizations and it should be under the direction of the merchandising department. The personnel in this sub-division should be familiar with the way castings are made, and be able to explain to a consumer the reason for any defects about which he may complain.

In discussing the accounting department attention was directed to superfluous records. It was stated that campaigns to eliminate superfluous records and to dispense with unnecessary clerical help have in certain foundries materially reduced overhead expense without imposing a handicap. In a brief discussion of the purchasing department, it was pointed out that

there are some buyers to whom the management gives more latitude in the selection of materials on a price basis than is economical. Men responsible for mechanical operations are, it was held, entitled to full consideration of their views regarding the suitability of materials and equipment.

Cost Problem Difficult in Jobbing Foundry

As to the cost department, it was said that the jobbing foundry presents a difficult problem in the adoption of many cost finding plans that can be effectively applied elsewhere. In discussing the weight classification it was said that although the weight of a casting has an influence on the cost of production and on its proper selling price, other factors make the weight classification alone deceptive. It was characterized as unfortunate that, up to the present time, many steel founders have adhered to the practice of classifying foundry costs by weight divisions, this, it was said, having handicapped the industry and all served by it.

The calculation of estimated weights from customers' drawings was cited as properly the job of the drafting department. Many inquiries for prices were said to be received without the weights indicated, and in this connection it was suggested that consumers would do much to help themselves and assist the foundry by showing the estimated or actual weights of castings on all drawings. Better cooperation along this line will assist the prompt receipt of quotations in closer conformity with production costs.

The order or schedule department was characterized as important. One plan of conducting this division consists of a record of the number of delivery promises kept during each month, the final percentages being scrutinized carefully by the management. In some foundries daily meetings are held, presided over by the head of the order department and attended by every shop foreman concerned in the execution of orders for castings. All requests for delivery promises are then considered and information exchanged regarding the elements involved in delivery.

The research or experimental department should be an active one, and the man in charge should be in close contact with the plant manager and except in rare cases should not have the responsibilities relating to production routine. The smallest steel foundry, it was said, gives ample opportunity for one good man to spend all his efforts on technical investigations that will improve quality or reduce costs.

A section of the paper was devoted to the compensation of workmen and it was thought advisable in large foundries to have a man continuously engaged in the study of compensation of workmen doing piece work, task work and day work. Piece work plans were discussed, as were also factors to be considered in bonus plans for foremen and others directing shop operations.

Industrial Fatigue Researches Being Made

Of interest also at the management session was an abstract of the report of the committee on elimination of unnecessary fatigue in industry, in which it was stated that the British Government has organized an industrial fatigue research board to make investigations of the most favorable hours of work and other conditions of employment applicable to industrial occupations. It was urged that, through the American Engineering Council, the need for similar governmental activity in America be brought to the attention of the Secretary of Commerce. Improper seating, nervous disorders growing out of unfavorable working conditions that cause fatigue and the serious eye strains caused by faulty illumination, were stressed, as resulting in an appreciable drain on productive capacity. Temperature and humidity of the air and correct ventilation were mentioned as important elements in reducing industrial fatigue. The British Industrial Fatigue Research Board was reported as having begun an investigation into the design of machinery in relation to the requirements of operation. Research on muscular fatigue, and on the neces-

sary frequency and duration of rest periods to overcome fatigue is being conducted at Purdue University. A special study of noise as it affects industrial fatigue is being made by Prof. H. T. Spooner of London, En-

gland, who predicts that before long noise will receive as much attention from hygienic authorities as noxious fumes, lighting, heating, ventilation, and sanitation, as an important factor in industrial activity.

Grinder for Rapidly Removing Burrs From Castings

A grinding machine called the Rotomatic and designed for the rapid removal of gate burrs from a variety of small castings has been placed on the market by the Ransom Mfg. Co., Oshkosh, Wis.

The removal of such burrs from 2600 $\frac{1}{2}$ -in. elbows in an hour with one operator is claimed. Pipe fittings up to 1 in. can be ground, workholders being available for each size and type of fitting. The castings are placed by hand into receptacles in a revolving workholder, which takes them past the wheel and then drops them out into a box on the floor below. In general the work done by the machine is said to be two to three

holder properly is also provided. The net weight of the machine is 1500 lb.

Wheel Truing Device That Clamps to Machine

A grinding wheel truing device arranged to clamp to the machine as shown in the separate illustration is also being marketed by the Ransom company. The cutters are mounted on ball bearings, and are controlled by the lever shown, traveling on planed ways across the face of the wheel being trued. The cutters may be adjusted to the wheel by means of the screws shown. The device is available for use on wheels with 4 in. and narrower face.

Bridgeport "Progress Week" Brings Orders to Manufacturers

Manufacturers of machinery and metal products who participated in the Progress Week exposition in Bridgeport, May 30 to June 6, report more than mere curiosity on the part of many of the 50,000 visitors to the fair sponsored by the Chamber of Commerce of that city. Actual orders were received for machinery, some of them from local companies who had been unaware of the product which was being made in Bridgeport. Several displays drew dramatic comparisons between the present uses of iron and steel, brass and copper, and those which held 50 years ago when Bridgeport had only 19,000 inhabitants and \$12,000,000 as its total wealth, as against more than 150,000 population and \$257,000,000 today.

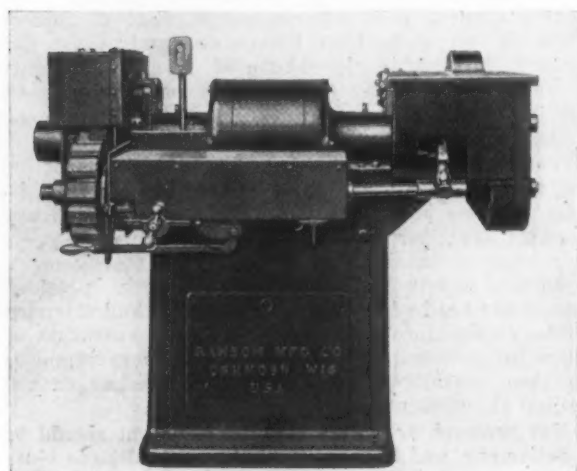
Williams Tool Corporation Holds Sales Conference

The third annual sales conference of the Williams Tool Corporation, Erie, Pa., maker of high-speed pipe cutting and threading machines which was held at the company's general offices at Erie, June 3, 4 and 5, brought together some 30 district sales representatives and agents from various parts of the country. The meeting brought out that the company had enjoyed a very prosperous year. Business meetings were held on each of the three days and were followed by various forms of entertainment, which included golfing and dinners at a local country club, as well as a trip across Lake Erie to Canada on a specially chartered steamer. The business discussions converged on the efficiency and labor saving feature of the high-speed, pipe cutting and threading machines as compared with the old type machines. Sales plans for the coming year were formulated. Announcement was made of the appointment of Manning, Maxwell & Moore, Inc., as the sales agent of the company for the Eastern half of the United States.

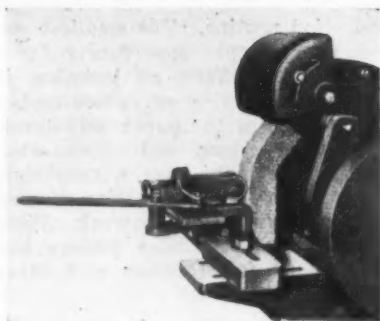
Unsatisfactory Conditions in British Pig Iron

WASHINGTON, June 9.—According to a cable received by the Department of Commerce from Acting Commercial Attaché M. M. Mitchell, London, small quantities of Belgian pig iron are now being offered in Great Britain at competitive prices. The cable adds:

Cleveland No. 3 pig iron is now 26 per cent lower than in August, 1923, since which date freight rates have continued unchanged at about 60 per cent above the pre-war level. Since pig iron is now only 15 per cent above the pre-war level, lower freight costs are essential. The principal safeguarding industries may be invoked against cheap imports, competition from which is becoming keener. There has been a general effort to reduce overhead costs, one company reporting 10 per cent cuts in salaries of managers and staffs.



The Special Grinder for Removing Gate Burrs Is Shown Above. The wheel driving device, at the right, is for use on wheels with 4-in. and narrower face



times that done by holding the castings by hand against the abrasive wheel.

The machine illustrated is driven by a 5-hp. 1200-r.p.m. motor and carries an 18-in. grinding wheel on one end of the spindle. On the other end of the spindle there is a gear box from which the feed is taken for revolving the workholder. The feed shaft may be operated at $1\frac{1}{2}$, 2 or $2\frac{1}{2}$ r.p.m., changes in the feed being made by means of a handle on the front of the gear box. The top of the gear box is provided with a hinged lid to make accessible all parts requiring oiling. The wheel guard is arranged with a hinged lid on the outside which may be lowered for changing of the wheels. The back of the guard has a removable piece to permit access to the wheel for dressing. The grinding wheel runs opposite to the usual direction, running up in the front of the machine, instead of down.

A cross feed is furnished so that the workholder can be fed in and out to the wheel to compensate for wheel wear. A quick trip for instantly stopping the feed mechanism in case a casting does not fit the

SELF-CENTERING COUPLING

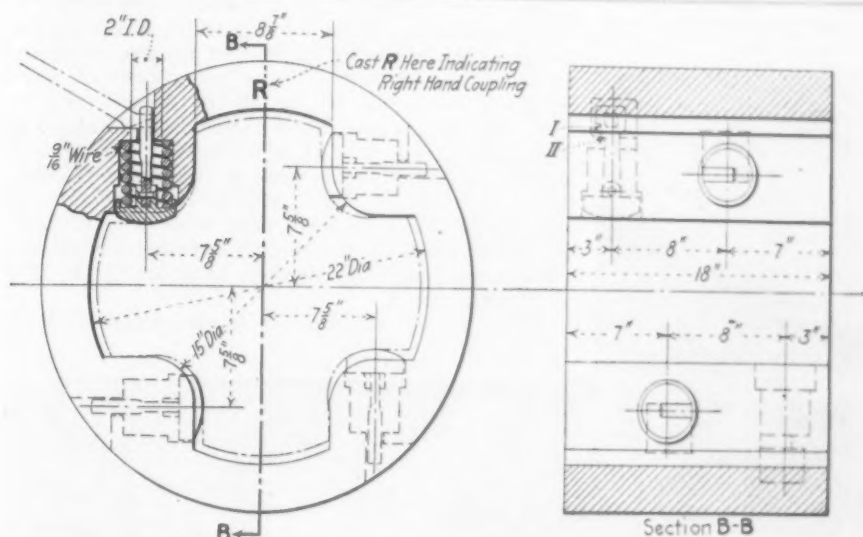
To Avoid Backlash and Drag—Springs Maintain Metal Contacts

Charles A. Psilander, consulting engineer of Youngstown, Ohio, formerly research engineer at Easton, Pa., for the Taylor-Wharton Iron & Steel Co., has developed a new type coupling box for rolling mills. An experimental installation is being made by the Youngstown Sheet & Tube Co.

In present designs the cruciform openings in the coupling box are made larger than the spindle and roll

heavy-duty spiral springs per coupling are provided on the inside. These springs can be handled from the outside periphery of the coupling; either placed in working position, bearing on opposite sides of the wearing surfaces, keeping them steel to steel and centering the coupling, or withdrawn and temporarily suspended, so that the bottom of the spring cap becomes flush with the inside surface of the coupling, thus making it free to be moved along the spindle ends when shifting the rolls, just as under present conditions.

As the recesses for the springs are cored, there is no machining required on the coupling. The spring hanger has two "lands" (I and II on the longitudinal



By Pressing Firmly Against the Grooves in the "Wobbler," the Spring-Actuated Plugs in This Coupling Produce Greater Uniformity of Motion and Reduce the Noise. They are said also to diminish power losses

ends which they connect, to allow for easy removal and for irregularity in castings and in roll line. The clearance between parts as a rule is from $\frac{1}{2}$ in. to $\frac{3}{4}$ in.

This looseness in all the connections between spindles and rolls requires a brake at the extreme end of the roll train, to keep the connections as tight as possible, thus eliminating backlash and noise as far as practical and some wear. The brake, generally called the drag, requires power, cooling water, grease and upkeep, in addition to cost of initial installation.

The new coupling box has been designed to dispense with all expense and labor caused by the drag. Of standard size and shape, it connects the standard spindle and roll ends. Recesses or housings for eight

drawing). These permit holding the spring base flush with inside of coupling, when II is engaged, as shown. Under this arrangement the coupling may be connected up with roll ends or pinions, without interference from projecting springs. For operation, I is engaged, when the spring takes the position shown at left, in the cross section.

To afford an approximate idea of the present cost of the drag, the power it requires was accurately measured in a modern electrically-driven sheet mill roll train, consisting of 20 roll stands, and one stand of pinions for driving or top-roughing rolls. To turn this train empty with the drags required 475 kw., and without the drags 375 kw. Stretcher blocks are unnecessary with the new style coupling.

Ore Transfer Car Operation Made Safer

Of interest in the intensive accident prevention work of the Ford Motor Co., are the safety features incorporated to eliminate hazards in the operation of its ore and limestone transfer cars at the River Rouge plant. These cars, one of which is shown at the right, run on a line which is 41 ft. high over storage bins for ore, crushed stone, etc. To assure safe operation, a fender, railing and wheel guards are provided on the car, and cable guards are placed over the first hopper to prevent employees walking off the high line and falling into the bins below. There is a controller located on each end of the car, so that the operator may always have a clear view of the track ahead. The signal bell is in contact with the controller and is arranged to ring before the car moves. The trolleys are also provided with safeguards.

Cleanliness, as well as the extensive application of mechanical transportation of materials, is a striking feature of the River Rouge plant, and throughout the entire unit safety has been a foremost consideration. This car is one added step in this direction.



A Number of Safeguards Have Been Provided

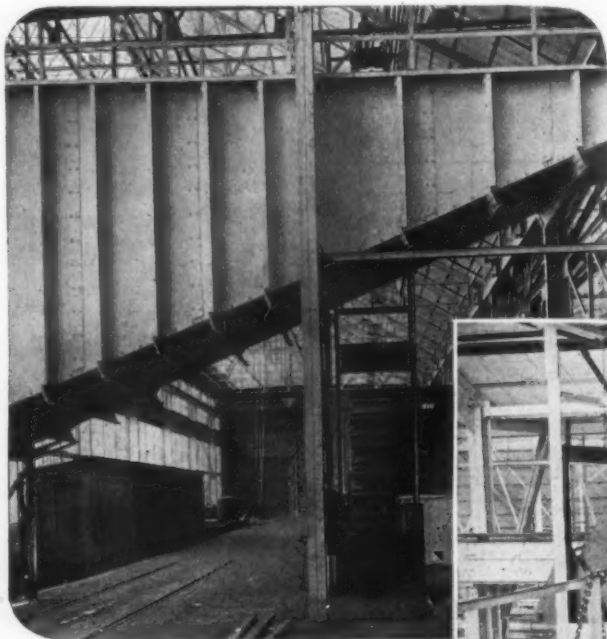
HANDLING STEEL CHIPS

Bin and Portable Air Hoist Save Floor Space in Chip Disposal

BY W. H. WINEMAN*

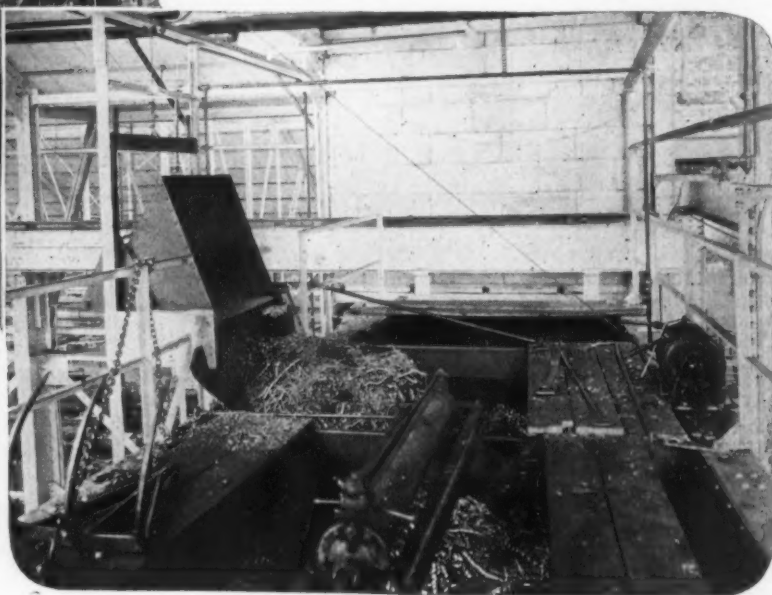
SMALL portable compressed air hoists, so frequently used for a variety of jobs in metal mines and by contractors, may also be put to good service in a machine shop or manufacturing plant. The small space and light weight of these machines, combined with their relatively high power and ease of control, render them adaptable to numerous special purposes. One of these is described below.

In the new Sullivan Machinery Co. plant at Michigan City, Ind., all manufacturing is done on one floor,



Top of Bin (right), with Skip Bucket in Dumping Position. At right is the hoist motor. The horizontal air cylinder used for dumping the bin contents into freight car appears in the center

As the Bin Is Located Above Headroom Requirements, It Uses No Floor Space (above)



covering about 200,000 sq. ft. The problem of disposing of the steel and cast iron chips, turnings and borings of the machines, at once presented itself. The cast iron turnings and borings were readily handled by providing small portable bins or hoppers, equal to a carload when filled. These were placed at convenient points, and their contents dumped into a freight car.

Disposing of the steel chips, turnings and borings was a more difficult problem, for the reason that the steel scrap is more bulky, and the chips and turnings are very tenacious, so that they interlock when piled together, making it hard to separate them when the pile was loaded onto the car.

Many methods for their disposal were considered, and discarded for one objection or another. The item of floor space, as well as expense, precluded the use of a baling press. A platform outside the shop was considered, where the waste might be piled and handled into freight cars by using a locomotive crane with clam shell bucket. This was expensive for operation, and necessitated wheeling the chips a considerable distance by hand.

As floor space economy was a prime consideration, the scheme shown here was finally adopted. This utilized overhead space previously of no value. A steel

bin was constructed at a point where it could discharge into a freight car at one end of the building. This bin, 25 ft. long, was made tapering on the bottom, and smooth inside. Its capacity, roughly, equals that of a gondola freight car. The bottom slope is about 30 deg., so that the chips slide out of their own weight. The top of the bin is flat, and about 26 ft. above the floor level. At the discharge end, the bin is 14 ft. high by 10 ft. wide, and at the small end, 3 ft. high and 7 ft. wide.

One photograph shows the elevator, running in vertical guides, and provided with a nopper or tray, holding a full wheelbarrow load of chips. The hopper is hoisted by means of a Sullivan single-drum "turbinair" hoist mounted on top of the bin, as shown in the other view.

The drum holds 500 ft. of 5/16-in. wire rope. Its hoisting power is 2000 lb. on single line, direct vertical lift, provided by the 6½-hp. helical geared air motor. Operation of the hoist is by a valve situated above the floor, and bolted to one of the elevator guides. The wheelbarrow men dump their loads of chips on the elevator trays, then open the valve. The tray or hopper is automatically dumped at the top of the hoist by a trip, similar to those used in dumping mine or blast furnace skips or cages. The valve is then closed, and the weight of the elevator runs the hoist backward, allowing the hopper and carriage to return to the floor of its own accord.

When the bin is full, a car is run under the large

end, and a vertical door, 5 ft. high by 10 ft. wide, is opened by means of the air cylinder hoist shown in horizontal position at top of the bin. This door operates like a tail-gate on a wagon.

This method of handling chips has saved about 500 sq. ft. of floor space and, owing to the ease of loading the chips into the freight car, and of handling the chips into the bins by means of the hoist, the cost of handling has been reduced about 50 per cent. A carload of chips weighs about 28 tons.

These small hoists are available in two-drum models, as well as single-drum, and electric single and double-drum hoists are available, as well as the "turbinair" model.

The Stocker-Rumely-Wachs Co., 117 North Jefferson Street, Chicago, has taken the sales agency in the Chicago and Milwaukee districts for the Reed-Prentice Co., Worcester, Mass., manufacturer of Reed-Prentice engine lathes and special machinery, Becker milling machines and Whitcomb planers. Capt. Lane M. Schofield, direct representative at Chicago for the Reed-Prentice Co., has gone to Washington, where he will be temporarily identified with the War Department. He is expected to return to Chicago in about thirty days.

*Sullivan Machinery Co., Michigan City, Ind.

Aluminum Paint in the Factory

Metallurgical Plants Furnish a Special Field for Its Use—Foundries and Boiler Rooms

BY JUNIUS D. EDWARDS*

METALLURGICAL plants present a peculiar problem in painting. Foundries are too often dark and poorly lighted, still savoring somewhat of the technical darkness from which modern foundries have largely emerged. Aluminum paint, in part a metallurgical product, is doing much to remedy these conditions and bring to foundries good lighting conditions, with improved efficiencies and economies. Aluminum paint has a special interest for metallurgical plants, not only because of its brightness, but also because of its remarkable protective properties under plant conditions which cause many paints to fail.

Aluminum paint is made by mixing aluminum bronze powder with a suitable paint vehicle such as spar varnish. Aluminum bronze powder is made from aluminum sheet by stamping it out into very thin, minute metallic flakes. This is a rather lengthy manufacturing process and, before finishing, the powder is subjected to a "polishing" process, which gives each flake a high brilliance and luster. This powder when mixed with spar varnish makes aluminum paint, in which the aluminum particles have the remarkable property of coming in part to the surface of the paint film and forming a continuous, uniform, metallic aluminum surface. This behavior of the powder is called "leafing."

Provides Reflecting Film

The aluminum surface confers upon the paint many desirable qualities. In the first place, it provides a bright and highly reflecting film which increases the lighting efficiency in any room covered with it. On outdoor exposure, aluminum paint shows remarkable durability, because the aluminum particles are non-transparent to light and so help protect the vehicle underneath from the destructive action of sunlight, which is one of the worst enemies of paint. In the foundry, melting room, and other parts of a metal-working plant, aluminum paint will show very satisfactory resistance against the sulphur-containing gases escaping from furnaces and the like. Aluminum paint will not turn black nor discolor in the presence of such gases, as do white-lead paints.

Heretofore, as it has been more or less impractical to paint the interior of a foundry with a white paint, most foundries have been content to use black or dark-colored paints. Light is just as valuable in a foundry as in other places. The United States Aluminum Co. foundries and other workrooms at the Cleveland plant have adopted aluminum paint exclusively as an interior finish. The result has been a pleasant surprise. Except in a few locations, where soot has been deposited on the paint, it maintains its original bright aluminum surface and is practically equivalent to the addition of many candlepower in lighting.

Opacity Covers Underlying Surface

Another advantage to be obtained in the use of aluminum paint is from its excellent hiding and covering power. The aluminum particles are non-transparent, and hence one coat of aluminum paint will hide the blackest surface with a bright, silvery coating. Where corrosion conditions are severe, either inside or outside, the use of two coats of aluminum paint is recommended. However, on interior work, where the metal is not subject to corrosive gases, one coat will ordinarily give all the advantages to be obtained from aluminum paint.

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Aluminum paint has another property which may be put to good use around furnaces and other heated surfaces. It has a relatively low emissivity or thermal radiating power. Where the temperature of a furnace is sufficiently high to make radiation an important factor, the heat loss may be markedly reduced by the use of a surface coating of aluminum paint. Fortunately, aluminum paint can be made which will show satisfactory adherence to heated surfaces and which will not discolor. The use, therefore, of aluminum paint on furnaces is a practical proposition.

A number of interesting cases have come to our attention where the interior of boiler rooms, including particularly the fronts of the boilers and furnaces, have been painted with aluminum paint. The result has been a marked reduction in the temperature of the boiler room, with corresponding improvement in the working conditions and efficiency of the workers. As is well known, the thermal radiation from a surface increases with the fourth power of the absolute temperature. At relatively low temperatures, say up to the boiling point of water, the radiation factor is a minor one and convection currents account for the main loss of heat from the surface. Aluminum paint on steam pipes, therefore, may reduce the rate of heat transfer only 10 or 15 per cent. However, as the temperature increases, the heat loss from thermal radiation becomes markedly greater, and aluminum paint will show real economies under these conditions.

Great Care Needed in Some Cases

Painting of furnace pipes has always been a serious problem, particularly when they attain a high temperature. No general recommendations can be made regarding the use of aluminum paint under these circumstances. In some cases it has been used on surfaces at relatively high temperatures with satisfactory results. In other cases the results were unsatisfactory. Aluminum paint will generally show good adherence to hot iron only when it has been applied to a clean, rust-free iron surface. Of course, the iron should be cold when the paint is applied, and the latter should be allowed to dry thoroughly before heating.

Under these conditions, when heated, the vehicle of the paint may burn off, but the aluminum powder seems to adhere firmly to the iron surface, provided it is not exposed to rain or outdoor condition. If, however, the iron surface is rusty or has other paint over it, the adherence of the aluminum powder is interfered with, and under these circumstances aluminum paint may be little better than other paints. It will not, however, discolor at the high temperature, although it may peel off under the conditions just outlined.

Aluminum paint is easily and satisfactorily made by mixing aluminum powder with a suitable vehicle, and applying just the same as any other paint. It can be either brushed or sprayed on. The proper proportion of powder to vehicle is 2 lb. per gal.; in mixing, the measured amount of vehicle can be poured over the powder and the whole stirred to a uniform mixture.

Spar varnish is the most generally satisfactory vehicle for use in making aluminum paint. For some uses a "heat bodied" linseed oil, also, will give satisfactory service. For interior application, almost any spar varnish is satisfactory, but for exterior use, the more elastic long-oil spar varnishes are recommended. On surfaces which are heated, some of the cheaper rosin varnishes and gloss oils work even better than the high-grade spar varnishes.

STEEL LABOR COSTS RISING AS EFFICIENCY DROPS

With smaller manufacturing volume, production per man-hour naturally declines, while wages take larger share of sales dollar

- (1) Wages in the iron and steel industry still stand at a high level.
- (2) Living costs are lower, causing an advance in "real wages."
- (3) Production of iron and steel per employee is declining.
- (4) Wages are taking a steadily increasing share of the value of iron and steel products manufactured.

BY DR. LEWIS H. HANEY

DIRECTOR, NEW YORK UNIVERSITY BUREAU OF BUSINESS RESEARCH

Are Wages Too High?

THE manufacturer is interested in the relation between wages and the prices he can secure for his products. From this point of view wages do appear too high. Compared with 1914, the wholesale prices of all commodities today are 56 per cent higher, and the prices of finished manufactured products are about 66 per cent higher. The earnings of manufacturing labor have risen much more, and are actually over 120 per cent higher than in 1914.

If the 1914 basis be considered obsolete, the comparison may be made with 1921, when business was deflated and equilibrium nearly restored after the post-war inflationary boom. On this basis,

wholesale commodity prices are more than 6 per cent higher and the prices of finished manufactured products are 4 per cent higher. The earnings of factory labor, however, are at least 10 per cent above the 1921 average.

As to the iron and steel industry, on a 1921 basis the composite price of finished steel is today one or two per cent lower and iron prices are down even more, while earnings of labor in the iron and steel industry are about 33 per cent higher than in 1921.

From another point of view, the cost of living is important. Here we find that in comparison with 1914, the cost of living is now 65 per cent higher, while in comparison with 1921 it is 1 per cent

lower. Here again, we find that wages have increased much more than the cost of living.

Judged by margins *per unit of product*, wages in this country may be considered relatively high. One consideration should be noted, however, which greatly reduces the force of the conclusion. This is the *output per man-hour*. Judged by the ratio of production to employment or payrolls, both in the iron and steel industry and in manufacturing in general, labor gained in productive efficiency between 1921 and 1923. Whether the increased output per man is sufficient to offset the decrease in spread between prices and wages can not be definitely stated; but it can be said positively that there

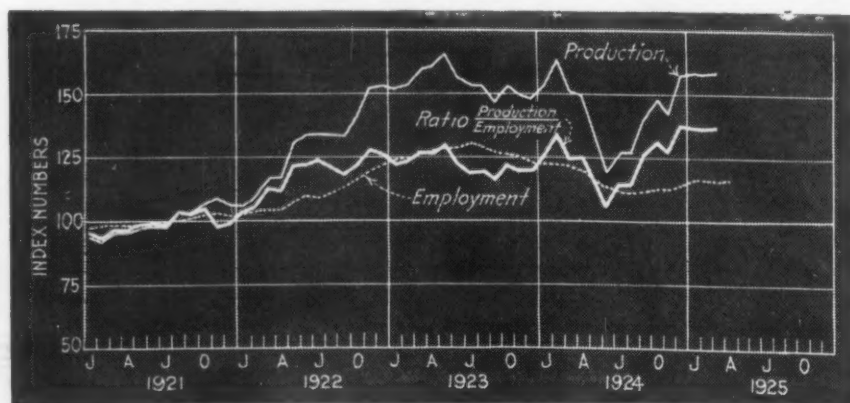
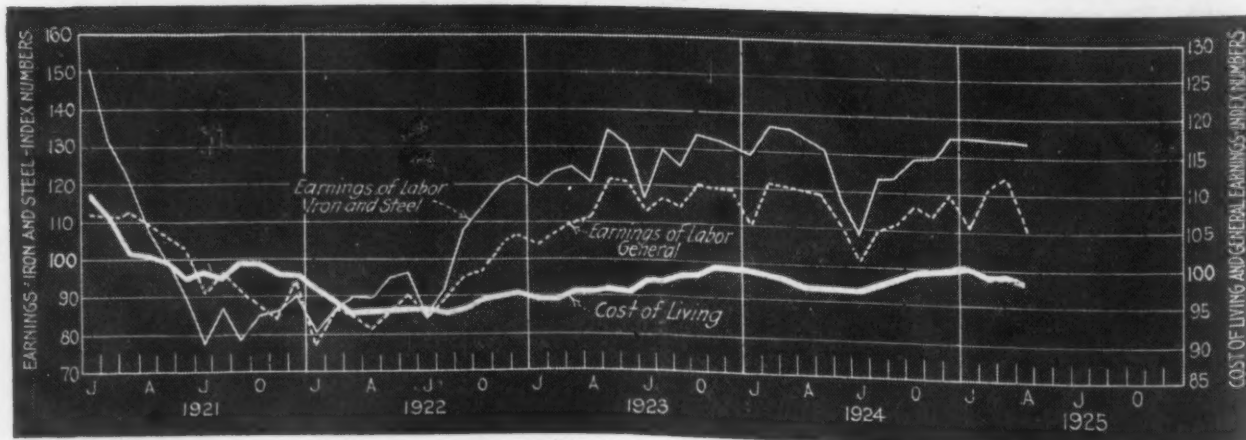


Fig. 2 (Left)—Productive efficiency in average industry still high, but tending to decline as volume of manufacture falls off. Fig. 1 (Below)—Cost of living shrinks faster than iron and steel mill wages, so that "real wages" have actually increased a little. Notice also that wages of average industrial labor have declined much faster than those of iron and steel workers.



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has been no improvement in this respect since 1923 in the iron and steel industry, and but little in manufacturing industries in general.

"Real" Wages Still Very High

THE cost of living index declined slightly in April to 98.8 per cent of the 1921 average. This compares with 100.2 in January, which was the recent peak (See Fig. 1).

The average earnings of labor also decreased in April, falling from 112 per cent of the 1921 average to 110. In the iron and steel industry the decline was from 134 to 133.2.

The conclusions to be drawn from Fig. 1 are as follows:

(1) The average earnings of workers in the iron and steel industry have recently been quite stable and are relatively much higher than in the average industry.

(2) Labor earnings in general are high compared with the cost of living.

Labor Efficiency at Peak in Average Industry

IN Fig. 2 are shown revised data comparing the production in manufacturing industries with em-

ployment data in those industries.

Manufacturing production has recently held about level, while employment has shown a slight downward trend. Accordingly, there has been little change in the output per man during the last three months and the ratio of manufacturing production to employment stands at the highest level in several years. The production index is almost certain to show a decline in April, and it is probable that the ratio for that month will decrease slightly.

Pig Iron Production Per Man Decreases

THE output of pig iron per man per day decreased sharply in April and was lower than in any of the months from December to March, inclusive. It was also less than at the spring peaks of 1923 and 1924.

In Fig. 3 there is shown a curve in which the output per man is adjusted to allow for the percentage of full time operation, and which, therefore, puts production practically on a man-hour basis. On this basis output also decreased in April and was less than in the months from November to March,

inclusive. It was about equal to March, 1924.

Labor Costs in Steel Industry Rising

THERE was a clear downward trend in April, in total value of iron and steel produced and also in the payrolls of iron and steel manufacturers. The estimated value of the product fell below that of April, 1924. Payrolls, however, also were less than last year, and the ratio of value produced to the labor expense was about the same as in the preceding month.

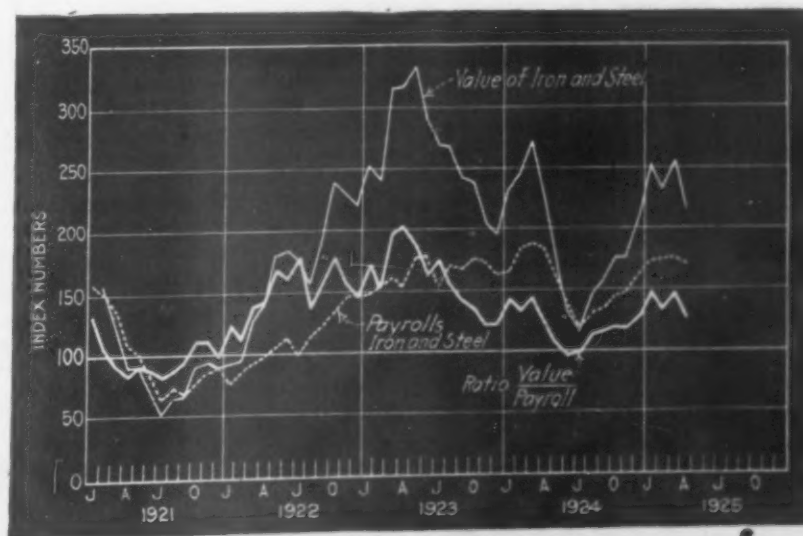
The margin between the value of iron and steel produced and labor cost has been decreasing, which tends toward lower earnings in the iron and steel industry. The May figures will probably indicate a continuance of the downward trend.

Employment Falls Off Slowly

UNEMPLOYMENT in manufacturing in the United States showed practically no change in April, but full time operation decreased about 1 per cent. State reports indicate decreased employment in railroad car shops, iron and steel forgings, and steel works and rolling mills. Structural iron works showed gains.

Fig. 4 (Right) — Labor costs in the iron and steel industry rise as the ratio of total payrolls to value of product manufactured becomes less. Payrolls can seldom be reduced in proportion to a cut in productive output

Fig. 3 (Below) — Another way of looking at the increase in labor costs in the steel industry. Production per man per day has shown a decided drop in the last two months



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Sentiment and Statistics in Trade

SOMETIMES there is discussion as to which is the better index of the future of trade, the feeling in business circles, or the concrete facts of production, prices, consumption, etc.; in other words, which is the more trustworthy as a guide, sentiment or statistics. In this connection there has been the comment that markets are made by men and not by materials.

Closer analysis indicates that the two should be considered together, not separately, irrespective of the amount of reliance placed upon either. Generally speaking, the material things, or the statistics, will predominate in the long run, while there is also the point that business feeling, however sentimental in a sense it may be, has been based in large part upon concrete facts of the statistical order.

Sentiment and statistics do diverge, but they diverge through the operation of a principle which can be applied in a joint study of the two classes of indexes. That principle, which is continually being used in the stock market, is that men sometimes take a line of conduct under, and sometimes over, the line that the plain physical facts would dictate. In Wall Street parlance, a given fact may have been already discounted. Sometimes the market is oversold, sometimes it is overbought. Sometimes conditions are bad, but not so bad as expected. At other times they are good, but not so good as expected.

All these expressions represent a painstaking and careful comparison between sentiment or opinion, which has appeared in actual record on the tape, and the physical conditions as to rates of consumption, movement, production, prices and stores of goods in existence.

Wall Street has reduced to a science the study of this principle that men's minds take a course alternately above and below the line that would be marked out by the material or physical facts. The same study can be made in business in general and in the steel trade in particular.

Just now steel gives an excellent illustration of the principle. The rate of steel production has

gone down to the lowest level since last October and steel prices have declined to an average approximately equal to last year's low point, yet throughout the steel trade there has arisen in the past few weeks a more hopeful feeling. There has developed "a better tone." Predictions as to steel conditions in the later months of the year show more "confidence."

This means, in Wall Street parlance, that the decline in sentiment has been overdone, that conditions are worse, but not so much worse as expected. The change in sentiment occurred when it was observed that steel shipments decreased at a much slower pace in the past few weeks than they were decreasing in April; that while there have been some price declines and no advances, the declines are far apart; that the very strenuous competition for orders does not lead to concessions such as were made in the past when there was similar keenness.

These changes in sentiment may affect to a considerable extent the "consumption" or working up of steel by direct customers of the mills, but they have little influence upon the actual and ultimate steel consumption. In November, December and January sentiment had it that steel consumption in 1925 was going to be greater than a study of the statistics would suggest. In March and April it had it the other way. The latest reversal puts it close to the line indicated by the physical facts.

The Railroad Money Problem

THAT there is still a railroad problem, in spite of the excellent functioning of the transportation system of late, is indicated in the recent address of R. H. Aishton, president of the American Railway Association. "Never in the history of the railroads in this or any other country," he said, "has transportation been so efficient as it is or has been in the United States during the past two years," and he added that this efficiency has brought a better attitude toward the railroads on the part of shippers and the public. However, that is only one side of the story, the other side

being, as he pointed out, that despite this excellent performance, despite the expenditures of money to provide better operation and better equipment, net earnings have not yet come up to the amount designated as a fair return by the Interstate Commerce Commission. Last year the railroads of the country fell short by \$148,000,000 of such return and in the first three months of this year they were \$21,000,000 under the minimum. Thus the problem remains of making transportation profitable and at the same time putting no further burden on such commodities as are already heavily taxed. There are possibilities of economy in the passenger service by the elimination of trains now run at a loss, as competition has added to the de luxe accommodations offered to the traveling public. But no large results are to be looked for in that form of saving until the consolidation movement has gone further. Certainly advances in freight rates would be resisted, even though just now there is no agitation for reductions, if we except certain bulk lines, as agricultural products, coal, coke, ore and pig iron.

Recasting the Steel Industry

IT was a very sweeping change in the iron industry when mild steel supplanted wrought iron, the trend being most rapid in the early years of the decade of the eighteen-nineties, but the changes that have occurred since in the character of steel have really been greater.

The difference in performance of mild steel as compared with its wrought iron predecessor was due to two things: First, the unit strength was increased. Second, the steel could be rolled in more suitable form. The web of the beam was made thinner, increasing the radius of gyration. Steel for various forming operations was rolled more accurately, permitting the use of finer machinery. There has been a large increase in the strength of ordinary steel, while alloyed and heat treated steel furnishes vastly better performance.

In steel sheets, for instance, the progress made in any one of several periods of a few years each amounts to fully as much as the progress represented in substituting steel for wrought iron. Often in one single year marked progress has been made in stamping and drawing operations, a job being easily done at one time which a year or two earlier had been considered difficult or impossible.

The rapid growth of the steel "strip" is a striking illustration of change. Ten years ago the strip had scarcely been heard of. Now, while it is difficult to devise a technical definition which in all cases would distinguish the strip from the hoop or band, every one knows the practical difference. The production of "strips" in 1923 was reported at 865,506 tons, and if a million-ton rate has not already been reached it soon will be, while the production still reported as hoops and bands has decreased but little.

It is superfluous now to say that the steel industry still has much progress to make, many new things to do. The fact is better recognized than it was at any time in the past, although the

record of progress to date has been greater than the most sanguine were disposed to expect in the earlier years.

College Men in Industry

THE National Industrial Conference Board, in a bulletin entitled "Forget you went to college," summarizes the results of an inquiry into the weak points shown by graduates of engineering schools in the early years of their connection with industry. The questionnaire brought hundreds of answers from employers, taking in both college men and those who have achieved without the advantages of an engineering education.

The complaints of shortcomings are along old lines: impatience for promotion; overrating the college course recently completed; underrating the importance of details of practice; unwillingness to work long hours in the plant or with the hands; little or no understanding of the business and practical aspects of the industry; inability to handle himself in contact with workmen so as to command their respect and admiration. To quote a paragraph of advice, an epitome of many opinions:

Because the college man, in order to gain the practical experience without which he will get little opportunity to put his theoretical training to real use, must serve a certain apprenticeship period in the shop, it is important that he rub shoulders with the common workman. It is during that time that he has opportunity to learn the things about his industry that he will never have again. Provided he is willing to work in the shop, workman's hours, to get his hands dirty and to do the many menial little tasks he must learn to do in order to comprehend the practical nature of the bigger problems in industry, the all important thing is that he know how to get along with men. He must gain their confidence and their good will, or he will learn little about the work. It would be fatal for him to be considered as "stuck up" by the workmen. Should he approach them, however, in a spirit of frank humility, showing a willingness to learn from them what he did not learn at college, he then will find things about the industry, the workmen, labor problems and the "tricks of the trade" that even the president of the company does not know and probably would be willing to go to much trouble and expense to learn.

The advice is sound, and fortunately is along lines which undergraduates of the engineering schools have come to know full well. Particularly is this true of the oft-repeated admonition to work summers in the mills and shops and to consider the first few years in industry a term of apprenticeship, or a post-graduate course, corresponding with law school or medical school.

The student who is to succeed in college to the point of taking a degree in engineering is usually an earnest worker. His course is a stiff one and he must take it seriously. Many of the enjoyments, not to say frivolities, of the academic college are denied him. It is the fashion for engineering students to spend at least a part of their long summer vacations working in an industrial plant. This is true not only of those who must earn money for college expenses, but of those

who have no financial worries. The result is an influence on future years which it would be hard to overestimate.

Another suggestion of the highest value came out of the questionnaire; namely, that the student must acquire the ability to present matters clearly and forcefully to executives or workmen. Too many graduates of engineering schools are weak in this respect, particularly in ability to present their ideas in writing. It often happens that a man only comes to realize his lack in this respect at a time when his handicap has become costly in the highest degree.

Machine Equipment and Taxation

MEN in the metal-working industries have learned some things to their advantage in their recent experiences with the high cost of taxation. With Federal, State and local taxes reaching formidable totals, plant inventories have become matters of vital importance. In hundreds of cases experts have made careful appraisals

which have opened the eyes of owners to conditions to which they had been partly or wholly blind.

Among other things they have learned that much metal-working machinery which, judging from their books, they had regarded highly, was practically valueless apart from what it would bring as scrap. The natural deduction was that a machine so out of date must of necessity be a liability as a manufacturing tool, where competitors had the advantage of the latest types of machinery embodying the extraordinary improvements of the past few years, with corresponding reductions in production costs.

These appraisals were honestly made, with the intention of getting at exact truth. They have disclosed what owners frankly acknowledge were easy-going methods of marking off for depreciation, as well as the failure to set aside a fund upon which to draw in a systematic effort to keep equipment at a high point of efficiency. The lesson learned has been made lasting by some very considerable savings in taxes.

Otto Wolff & Co. to Be Represented in New York

The export subsidiary of Otto Wolff & Co., Cologne, Germany, will be represented in the United States by Kurt Orbanowski and Edgar I. Mills, with offices at 149 Broadway, New York. Mr. Mills will be in charge in New York, while Mr. Orbanowski will handle business in Germany, where he has other interests. Mr. Mills was at one time representative of the Stinnes interests in the United States and is an importer of aluminum products. Mr. Orbanowski was until recently head of Amstee, Inc., Berlin, the German connection of the American Steel Export Co., New York. After a month to six weeks' tour of steel consuming districts in this country he will return to Berlin.

Otto Wolff & Co., one of the largest steel corporations in Germany, is estimated to produce as high as 25 to 30 per cent of the total German steel output. The two principal companies in the Wolff organization are the Phoenix Aktien Gesellschaft, Ruhrort, and the Rheinische Stahlwerke Aktien Gesellschaft, Duisburg. The corporation controls some 17 plants in the Ruhr. The American agents will quote on pig iron, Bessemer and open-hearth steel billets, sheet bars and wire rods; light and heavy rails including girder sections; plain and reinforcing bars; shapes, plates, sheets, hoops and bands, wire, nails, pipes and tubes and tank work.

Freight Rates on Non-Ferrous Scrap Suspended

WASHINGTON, June 9.—The Interstate Commerce Commission entered an order yesterday suspending until Oct. 6 schedules proposing to revise the carload rates on scrap brass, scrap bronze and scrap copper from interior Trunk Line points to points in Central Freight Association territory, observing existing commodity rates from the Atlantic seaboard as maxima, which would result in both increases and reductions. Illustrative of the proposed rates were those increasing from 20c. to 25c. the rates on scrap brass from Pittsburgh to Albany, N. Y., but decreasing from 32c. to 25c. the rates from and to the same points on scrap copper.

"The Turning Point in Coal" is the subject of a paper to be presented at the bimonthly meeting of the mining section of the Engineers Society of Western Pennsylvania on Tuesday evening, June 16, by C. E. Leshner, assistant to the president, Pittsburgh Coal Co.

Pipe Company Negotiating to Sell French Product

It is understood that negotiations are in progress between the Universal Pipe & Radiator Co., 41 East Forty-second Street, New York and B. Nicoll & Co., 294 Madison Avenue, New York, which, if concluded, will permit the Universal company to round out its line of cast iron pipe with a complete range of bell and spigot sizes and fittings for gas and water service. B. Nicoll & Co. are the agents for the United States of the Societe Anonyme des Hauts Fourneaux et Fonderies de Pont-a-Mousson, Pont-a-Mousson, Meurthe-et-Moselle, France. This company, according to importers familiar with recent developments in Europe, is a member of a syndicate which includes, in addition to the German company, Gelsenkirchen Bergwerks, a maker of cast iron pipe, several smaller independent producers in Germany, France and Belgium.

Now Heads Wickwire Spencer Corporation

David F. Edwards, vice-president Wickwire Spencer Steel Corporation, has been elected president of the corporation to succeed Theodore H. Wickwire, Jr., who has resigned. Mr. Wickwire has spent most of his life with the Wickwire company which was incorporated at Buffalo in 1907. Mr. Edwards is connected with the company's New York office and has been vice-president since the reorganization effected last year.

Acquires Detroit Seamless Tube Co.

J. W. Hubbard, Pittsburgh, has acquired all of the stock of the Detroit Seamless Tube Co., Detroit. This company has a plant capable of producing 1500 to 2000 tons of hot-rolled and cold-drawn tubes monthly, and it is the plan of the new owner to add to the equipment and capacity of the plant. Its location in Detroit has been highly favorable for serving the demands of the automotive industry for mechanical tubing and it also has enjoyed good railroad business in locomotive boiler tubes. Mr. Hubbard a short time ago acquired the Sand Rule & Level Co., Detroit, and now is the dominant factor in a long list of companies, which, besides those recently acquired, include the Standard Engineering Co., Ellwood, Pa., Hubbard & Co., Pittsburgh, and the Hubbard Steel Foundry Co., Chicago.

White Collars Versus Overalls

Proof That Young Men Can Be Induced to Enter
the Metal-Working Trades if the Work
Is Made Interesting Enough

BY H. A. FROMMELT*

WHEN the metal industries of Milwaukee entered upon an intensive program of apprenticeship training some five years ago they were told and with no little emphasis that American boys could no longer be induced to enter the trades, particularly the foundry. It was asserted that they could not be induced to try even the molding and coremaking trades. Nevertheless this industrial community insisted that unless some other method be found for training young men skilled in the foundry business, the future of that branch of the industry was dark, to say the least. There seemed but one method to try, namely that of shop training in the form of apprenticeship. After careful planning a district program was outlined and agreed to, which has since become the instrument of a successful industrial training program.

Today young men are not only working as apprentices in various Milwaukee steel and gray iron foundries but they are also waiting as applicants to enter upon this most interesting of the metal trade crafts. There are at present more than four hundred young men between the ages of 16 and 20 working as molder and coremaker apprentices in Milwaukee foundries. They have not only been induced to try this interesting trade but also to remain and become thoroughly acquainted with the business of making steel and gray iron castings. Some of these young men have remained throughout their four years and graduated into the journeyman class and others even into foremanship.

Diversified Training

The business of making castings is extremely interesting, and if its interesting characteristics can be presented to the young apprentice there is little difficulty in making him an enthusiastic mechanic in the foundry. Unfortunately, the methods usually employed hitherto have been quite different from this.

If the foundry business can be made interesting to the average young man, he can be attracted to this work. Nor is this mere theorizing. It has been done by giving young men an opportunity to learn all that there is to know about the business of making castings from the melting of the iron or steel to the annealing and checking of the casting. His principal object is molding, to be sure, but that in no wise makes it neces-

sary to keep from him something of these other aspects of foundry work. In fact, this should be an excellent reason why he should know something of the material which he is handling, something of the sand which he is using, how the castings are heat treated and how they can be reclaimed after inspection by welding or further heat treating.

If such things are included in an apprenticeship course for young men who wish to become steel and gray iron molders, and something of the related trade sciences is drawn together in proper course form and supervision is added so that he is assured of his being properly moved according to his schedule from place to place in the foundry, foundry apprenticeship can be made attractive. This is the receipt that was used in the Milwaukee foundries.

Applicable to Small Plants

"But our business is too small and too highly specialized to justify training apprentices." This is probably the next most frequent objection to an apprenticeship training program. It is a serious one in view of the fact that probably a majority of the foundries in any industrial community are either too small or are so highly specialized that it would be impossible to give a young man a complete course of training within any one shop.

But the supply of skilled personnel for any trade or group of trades is a community problem and hence apprenticeship should be considered so. The small plant or specialty shop needs but few mechanics, and likewise few foremen. Hence, unless some means can be found whereby these smaller plants can do their proportionate share in the training of mechanics they would be as parasites securing their labor from the men trained by the larger plants.

Milwaukee met this phase of the problem by laying out a cooperative scheme whereby the smaller plants cooperate with the larger in the training of apprentices. More specifically a number of smaller plants are grouped with a larger plant and within this group, schedules of shop work are so arranged that the apprentice may spend a relatively short period of time in the small plant, then completing his term in a larger plant. The proportion of time in each plant will depend entirely upon the quality and diversity of work in the small plant. Whether the apprentice starts his train-

*Apprentice superintendent, Falk Corporation, Milwaukee.

AS CORCHING summer day . . . the call of cool waters in the swimmin' hole . . . and a fence that had to be painted before Tom Sawyer could join the gang. It looked like an unprofitable afternoon. But Tom knew human nature, though he had never studied any "ologies." And the next boy who came to jeer remained to whitewash. Tom had told him that it was a very particular job . . . few folks could do it properly . . . the artistic effect might easily be ruined by an inexperienced hand. Did the newcomer express a desire to try his skill at

whitewashing? Well, it was a risk and Tom really hated to let the brush pass into another's hands, but . . . a jackknife closed the deal.

When the fence was done, Tom was the richer and the gang the wiser. Which is merely another proof that the secret of getting good human material into our foundries and shops lies in making the job interesting, attractive and perhaps . . . just a little hard to secure. This is the first of a number of articles showing how the Milwaukee metal-working plants have done this thing successfully and profitably.

ing in the large or small organization is immaterial. When he has completed his apprenticeship he is free to go wherever he pleases. The primary object of this group or cooperative scheme is the training of a sufficient number of mechanics to meet the needs of the district. Thus, a specialty shop whose needs may be relatively small can, under this plan, employ a thoroughly trained mechanic or a foreman suitable for their needs without in any way feeling that they are taking the skill which some other organization has trained.

Even under the supposition that the old system of handyman training was adequate to meet the demand for mechanics, few would dare assert that it could be relied upon for the training of foremen. Only an apprenticeship which gives a young man an opportunity to learn all essential operations can be looked to as a source of executive supply. If a young man has had an opportunity not only to mold and make cores but to learn something of the melting and making of iron and steel, of annealing and other heat treating operations, of the inspection and repair of castings, he is likely to be a candidate for foreman, when he has added sufficient years of experience to his apprentice training. That has been one of the outstanding results of the Milwaukee experiment. Young men who have just finished their apprenticeships have already found their way into minor foremanships.

Nor is this all. Not only does apprenticeship mean that young men are coming up through the ranks who will fill in the places made vacant among mechanics and foreman, but it also means an extremely flexible and elastic organization. A group of young men scattered throughout the various departments of a foundry become the shock troops of the industrial army. No matter where the need or how pressing it may be, it can always be met by these young men who have had experience throughout the organization. A sudden demand upon the corerom arises and causes no little worry. But the apprentices who have already had some training in this department and are now at work in other places in the shop can be rushed to fill this gap. Or an emergency demand presents itself to the inspection department. It is necessary to handle a

great number of castings which would be beyond the powers of the normal inspection group. Apprentices who have had an opportunity to become acquainted with the making of these castings in all their phases can be relied upon, with some supervision, to meet this unexpected demand. The apprentice group is the reservoir from which can be drawn at will such human material as is necessary to meet those situations with which every organization is sometimes faced.

Moreover, an apprenticeship training plan can and does become the basis for better industrial relations. If apprenticeship is envisioned as a true industrial education some of the fundamentals of conducting a business will be made a part of the training course. These young men learn to know the problems of the employer better than they could in any other way. Since the apprenticeship contract is considered by the employer as a binding obligation, the justice and fairness of the whole scheme becomes so apparent to the apprentice that he becomes a source of good will throughout the organization. If to all this is added sympathetic and adequate supervision throughout the apprenticeship years the apprentice comes to realize that the distance between the employer and himself is after all not so very great.

It Can Be Done

FIVE years ago, when Milwaukee faced a shortage of skilled foundry workers, it was planned to induce more apprentices to enter the foundries in that city. "It can't be done," said the skeptics. "The young men of today want white collar jobs." Many of the doubtful said, "Our business is too small to justify training apprentices." Some of the large plants suspected that they would be training the labor which someone else might hire at the completion of the course. In brief, the weight of opinion said, "It won't work." But it did, and reason why it worked is told herein. Next week the educational program used in Milwaukee will be described.

To Sell Surplus of American Radiator Blast Furnaces

BUFFALO, June 9.—The American Radiator Co. has appointed Waldo, Egbert & McClain, Inc., Buffalo, selling agents for the surplus pig iron of its subsidiary, the Tonawanda Iron Corporation, North Tonawanda. Coincident with this announcement is the statement by Waldo, Egbert & McClain that Alfred F. Stengel, for 16 years associated with the Buffalo office of Rogers, Brown & Co., has been named vice-president of the former concern.

The full slate of officers now is: President, Fred J. Waldo; first vice-president and treasurer, Justus Egbert; vice-president, Loring G. Calkins; vice-president, Alfred F. Stengel; secretary, Elmer E. Finck; assistant secretary, Michael F. Selbert.

Waldo, Egbert & McClain are sole selling agents for pig iron produced by the stacks of the Wickwire-Spencer Co., Inc. Surplus of Tonawanda pig iron is brought about by softened iron markets, which makes it unnecessary to ship from Tonawanda to some of the distant radiator plants. The Tonawanda stack now produces 430 tons daily.

The American Society for Steel Treating has issued in printed form leaflets covering recommended practice for the heat treatment of 18 per cent tungsten high-speed steel and recommended practice for the heat treatment of plain carbon tool steel. These two matters have been before the society for a little over a year and were recently revised by the sub-committee on tool steel. They have now been adopted by the society itself as standard recommended practices.

Reorganization Plan of Standard Tank Car Co.

Grayson M.-P. Murphy, chairman Standard Tank Car Co., Masury, Ohio, has announced that the board of directors of the company has been reconstituted in accordance with the plan of readjustment adopted last February. Other details of the plan have been completed. The new board includes: James Andrews, vice-president and general manager; Walter P. Chrysler, chairman of the board, Maxwell Motor Corporation; William F. Cutler, president Southern Wheel Co.; Duncan A. Holmes, vice-president Chase Securities Co.; Stewart McDonald, president Moon Motor Car Co.; J. B. Orr, president, and Samuel F. Pryor, chairman executive committee, Remington Arms Co.

Mr. Andrews until recently was vice-president of the Pennsylvania & Ohio Electric Co. and, during the war, was in charge of operations at Hog Island. Mr. Graham was formerly vice-president Illinois Car Co.

Mr. Murphy said that new business is favorable, recent orders including 500 gondolas from the Chicago, Milwaukee & St. Paul Railroad, 100 tank cars from the Quaker City Tank Line, and 75 tank cars from the Cities Service Co. The company has opened an office at Tulsa, Okla., with F. S. Thompson in charge.

A water purification system having a capacity of 2,500,000 gal. per day is being built for the Farrell, Pa., works of the Carnegie Steel Co., by William B. Scaife & Sons Co., Pittsburgh. The apparatus, comprising the We-Fu-Go intermittent purification system, will also be supplied for the Lucy furnaces of the Carnegie company to handle water from the Allegheny River.

"Open Price" Associations May Go On

Decision of United States Supreme Court in the Cement and Maple Floor Cases Expected to Encourage Resumption by Organizations

THOSE who have followed closely the activities of trade organizations commonly known as "open price" associations freely predict that the decision of the United States Supreme Court in the cases of the Cement Manufacturers' Protective Association and the Maple Floor Manufacturers' Association will open the door to the resumption of exchange of trade statistics as formerly practised by these associations.

Many of these associations flourished in metalworking lines. Nearly every branch of the steel and iron industry, such as steel castings, forgings, bar iron, bolts, nuts and rivets, pipe and fittings, etc., had its association, but practically all of them were disbanded following the decisions of the Supreme Court in the hardwood case and the linseed oil case. Several of the associations which had to do with products used by the building trades were discontinued as a result of the work of the Lockwood committee of the New York legislature. Rather than face the prosecution threatened by Samuel Untermyer, as counsel for the Lockwood committee, these associations voluntarily disbanded.

One of the most active of trade association secretaries was A. A. Ainsworth, 45 West Forty-fifth Street, New York, who gathered and disseminated statistics for 16 associations of which he was secretary. Mr. Ainsworth, in a statement to THE IRON AGE, said that he sees no reason why all of the association activities with which he was formerly connected may not be resumed.

"In the light of this decision of the United States Supreme Court," said Mr. Ainsworth, "we find that we were doing nothing that could in any way be construed as illegal. We did merely what the decision in the cement and maple floor cases says may be done, namely, to 'openly and fairly gather and disseminate information as to the cost of . . . products, the volume

of production, the actual price which the product has brought in past transactions, stocks of merchandise on hand, and approximate cost of transportation from the principal point of shipment to the point of consumption,' and we did all of these things without in any way trying to influence the prices at which products were sold, without attempting to limit production or distribution by agreement or otherwise. Every member of our associations simply received the information which we gathered in the secretary's office and he was at perfect liberty to follow his own policy in applying these statistics to the conduct of his own business.

Gives Credit to Hoover

"Under the situation which has prevailed during the past few years," Mr. Ainsworth continued, "manufacturers have not been able legally to obtain the information which they are entitled to have in order to conduct their businesses intelligently. We are coming into an age of reason when we begin to realize, as has the Supreme Court, that unrestrained competition is neither necessary nor economic. Mr. Herbert Hoover deserves a great deal of the credit for having brought a new touch of sanity on this subject to the minds of all who are vitally concerned in the preservation of business along sound lines. Mr. Hoover has long advocated that business be permitted to do what the Supreme Court now says it may do. He has, in fact, worked hard to gather statistical data which the Department of Commerce could furnish to industry, but even the Department of Commerce has not known how far it could go in view of the frequently changing attitude of the Department of Justice, each Attorney General seeming to take a somewhat different view of what the attitude of the department toward trade associations should be."

The Most Far-Reaching Decisions in Fifteen Years

WASHINGTON, June 9.—Decisions of the Supreme Court of the United States on Monday of last week favorable to trade association work is expected to bring about the revival of organizations which had disbanded owing to the doubt that existed as to their legality. Secretary Hoover, commenting on the decisions, made it distinctly plain that the decisions are not to be construed as providing a means of monopoly for big industries. The opposite is intended and will be the result, according to Mr. Hoover, who said it is especially desired to aid the smaller industries.

Views of Secretary Hoover

"I am advised," said Mr. Hoover, "that the recent Supreme Court decision in the trade association cases clarifies one large point, that is, the reporting of volume of production, stocks, consumption, and the movement of prices for both farmers and business men in the interest of competition and sound organization. I am advised that it is equally clear from the decisions that any conspiracy to fix prices or to control distribution is as much a violation of the law as ever. Our understanding of the distinction is that, while brickbats can be used to commit murder, it is not necessary to prohibit the construction of brick houses in order to prevent it. Anybody about to enter into a conspiracy in restraint of trade naturally uses figures

and statistics, but this does not imply that such statistics are responsible for such conspiracies."

Following the decisions there was an unusual amount of published comment on them, and one published statement is said to have inferred that it is the policy of the administration, backed by the Department of Commerce, to promote consolidation of business into big units. At the regular newspaper conference with Secretary Hoover on Thursday of last week, he was asked if this statement was true, the answer being as expected—a vigorous denial.

"It certainly is not," said Mr. Hoover. "It is exactly the reverse of the truth. In the competitive industries the whole work of this department in assistance to foreign trade, in cooperation to establish standards and grades of products, in scientific and economic investigation, publication of statistics, etc., is for the purpose of giving the small unit the same advantages which are already possessed by big industries."

Statement of Lumber Association Secretary

An interesting analysis of both decisions was made by Dr. Wilson Compton, secretary and manager of the National Lumber Manufacturers' Association, who has been a close student of the subject of trade association work in its various phases, including its legal side. Dr. Compton declared that the Maple Flooring

and Cement decisions are the most fundamental and far-reaching under the anti-trust laws since 1911.

In a statement prepared especially for THE IRON AGE Dr. Compton said:

"The United States Supreme Court decisions on Monday, in the trade association cases, contain the most clear-cut, authoritative statement ever made of the statistical and informational activities of trade associations, permitted by the law.

"The most significant feature of these decisions, however, lies in the fact that the Supreme Court has clearly taken into consideration economic facts regarding the bearing of these association activities upon the maintenance, in actual practice of the trades, of intelligent and fair competition upon industrial and commercial progress and upon public welfare. In so doing it has extended, in an important way, the rule of reason, first enunciated about 15 years ago in the interpretation and application of the Sherman law. This will result, if hereafter consistently followed, in the practical possibility of much closer adaptation of basic law effecting business organization to the changing economic necessities of modern business, considered in the light of business progress and public economic welfare.

Competition Tends to Establish Uniform Prices

"In the decision in the Cement case the Court explicitly recognizes that in the case of a fully standardized commodity like cement, the natural result of absolutely free, fair and equal competition would be uniformity in price in the same markets, at the same time, among the various competitors, each acting independently in the light of full knowledge of conditions of the market and rules between supply and demand.

"In short the Supreme Court has recognized facts which thoughtful business men and economists have long contended, and which the Government heretofore, in its administration of the anti-trust laws, has ignored, namely, that free and equal competition, under normal conditions, tends to establish uniformity, not disparity,

of prices, as between competitors; and that, under ordinary circumstances, striking disparities between competitors is an indication of the absence, not the presence, of conditions permitting fair, free and equal competition.

"The gathering and dissemination of information is explicitly declared to be lawful for trade associations. This clearly includes costs, production, prices received, stocks, cost of transportation, credits, contracts let, freight rates and shipments. This decision has no bearing, except by remote implication, upon the practice of 'basing point' quotations used in some industries. It applies exclusively to the compilation, distribution and publication of information. The line is not drawn against any facts. But it is plainly to be understood from the decisions that the use of statistical exchanges, as merely a convenient means of carrying out agreements in restraint of trade, converts an inherently lawful activity into an unlawful practice.

"To my understanding, the strongest appeal to business and trade associations in these epochal decisions is in the requirement that good faith and fair play shall be always employed in the conduct of these association activities. The right to acquire and exchange trade facts and information is the strongest practical weapon to prevent destruction of competition and the eventual substitution of monopoly. Business men have long been urging the avoidance of unnecessary Government interference in and regulation of industry and commerce. The Supreme Court has now, in this clear-cut charter to trade associations, clearly established the opportunity of these industries to govern themselves, maintaining fair competition, avoiding preventable wastes, encouraging regularity and continuity of operations and stability as the normal condition of business.

"These decisions, which are the most fundamental and far-reaching under the anti-trust laws in the last fifteen years, open up a wide field of opportunity and an equal responsibility for good faith and fair play on the part of trade associations."

PROTEST FREIGHT RATES

Conference of Scrap Consumers and Shippers Considers Two Subjects

CHICAGO, June 10.—The Scrap Steel Consumers and Shippers' Conference, a western organization of dealers and users of scrap, with general office at 608 South Dearborn Street, Chicago, has filed a petition to be argued before the Interstate Commerce Commission at Washington, June 15 to 17, that increases in rates on scrap from Louisiana and Arkansas to St. Louis and northern points be removed, restoring the rates in effect prior to the advances put into effect about a year ago.

This action comes at a time when Southwestern roads propose to apply class rates on scrap, making them even higher than at present. The proceeding at Washington will come under the Southwestern related cases, known as docket No. 9702. A Texas adjustment under this docket was effected recently, following conferences between the scrap conference and the carriers.

The rate on scrap from Texas common points to St. Louis had been increased from 32½c. to 38c. per 100 lb. Proportionate advances were made on rates to other northern points. The advances were suspended by the Interstate Commerce Commission upon application by the scrap conference. At a hearing at Fort Worth, Tex., last July, A. L. Dreher, secretary of the conference, who is traffic manager of the Hyman Michaels Co., Chicago, and R. K. Keas, vice-president of the conference and traffic manager Laclede Steel Co., St. Louis, presented arguments against the advances. The commerce commission decided that the increases were justified and following subsequent con-

ferences between the scrap consumers and shippers' organization and the carriers new rates were agreed upon.

To St. Louis the new rate on a 70,000-lb. minimum carload is 31c. per 100 lb., a reduction of 1½c. from the former rate. On a 50,000-lb. minimum carload, the old rate of 32½c. was retained.

The scrap conference is much concerned over a recent decision of the Interstate Commerce Commission in the case of the Alaska Junk Co. vs. the Spokane, Portland & Seattle Railroad. The Alaska company had bought rivets from the Government and because it admitted that the rivets might have value for other than remelting purposes, it was decided that the scrap rate should not apply. This principle would have very far reaching effects if carried to a logical conclusion. It would mean that a large proportion of shipments now enjoying scrap rates would be thrown on a higher level of rates, notwithstanding that the materials actually went to the melting pot or were intended for melting at the time of shipment. Many railroad tariffs carry a clause specifying that scrap rates apply only on materials which are to be remelted, but the commerce commission has never directly passed upon the point. Many commodities handled as scrap and commonly regarded as such are never remelted. Rerolling rails for example are merely reheated and reduced to different shape. The scrap conference proposes if possible to bring a test case before the commerce commission under so-called shortened procedure to obtain a definite settlement of this question.

The Domhoff & Joyce Co., Cincinnati, broker in pig iron and coke, has closed its Cleveland sales office located in the Schofield Building.

Saving Money on Malleable Castings

Study of Specifications, Attention to Simplicity of Design and Common Sense in Rejecting Can Net Real Profits

BY H. A. SCHWARTZ*

THOSE who have had occasion to follow the matter of specifications for the physical properties of malleable castings as laid down by the American Society for Testing Materials are aware that the standard has constantly improved. It may be an open question whether a particular requirement is better met by malleable of the so-called "certified" grade; i.e., conforming to the A. S. T. M. requirements, than it would be by an inferior product. Much here depends upon the intended use and very probably the answer is not the same for all purposes.

A most important source of increased production costs for a given casting is to be found in the care taken by the foundryman to produce mechanically sound castings. The hard iron casting shrinks about $\frac{1}{4}$ in. per ft. during the process of freezing and cooling, about twice as much as gray iron.

Since, of necessity, the surface of a casting freezes first, it follows that when cooling is complete, there is too little volume of metal to fill the outer shell, and somewhere there are voids. This difficulty is met in the foundry by the provision of feeders, whose function is to supply molten metal to the interior of the casting itself during freezing. The shrink is thus transferred from the casting to the feeder and discarded. Other methods exist also, such as the use of chills to rapidly cool certain sections and special gating methods.

Paying for More Than You Get

Although these precautions cost much money, for they increase the work required of the molder, and the percentage of remelt. These precautions you should neither ask, nor pay for, if a sound casting is not required for your purpose. For example, it is foolish to spend money to eliminate a shrink in the center of a boss which later will be drilled out. On the other hand, however, it is equally foolish to demand a material of superior quality and not be willing to pay enough to have that material utilized to the best advantage.

There comes to mind a certain very large consumer of malleable castings, whose purchasing policy is very largely, perhaps entirely, determined by price. An examination of a great number of castings furnished him from a half dozen different sources, for use in a vital part, has led to the conviction that he has never bought a reasonably sound casting, although the material has, in general, been of standard quality. That the results were unsatisfactory is evidenced by the fact that in other similar parts, formerly made of malleable, this user substituted a forging.

Malleable castings have established a reputation for surface finish, and the consumer has come to demand this, usually advisedly. It is, however, true that surface perfection costs money, in molding precautions, rejections, careful grinding and so on. It is just a little disconcerting to find, as we have found, such a condition as the following.

A certain casting, furnished by ourselves, was required to have two surfaces exactly flat and at right angles, all gates ground smooth, two ears with bosses to be parallel and at a distance apart of fixed tolerance, the shape being such as to necessitate coring, to produce the bosses which could not be "drawn." The thickness of the casting was somewhat variable and in general small.

The part was replaced by a stamping, which could be produced cheaper per unit. Now, many objects can and should be made by forming sheet steel, rather than of castings, but we did not regard this as one

of them until we saw the stamping. All bosses were eliminated, the thickness of metal was uniform, and perhaps twice the original minimum. The two plane surfaces at right angles had become a highly convex, flat surface, and an ear much warped by the punch. What had been two accurately placed ears with bosses became two corners of a sheet bent up, neither straight, parallel, nor perpendicular to another face as required. All edges were rough as they came from the punch.

Now it is perfectly possible that the stamping conforms in all respects to the demands made upon it, but if so, then the purchaser burdened the cost of his malleable castings with many useless refinements, and it cannot be said that a comparison of the two jobs represents the difference in cost between the two methods of producing the same article.

Attempt to Reduce Annealing Time

It is to the interest of every producer of malleable castings to curtail his annealing time as far as possible. By so doing he decreases his investment equipment and castings in process pro rata, his fuel consumption in slight degree, avoids difficulties from excessive decarburization, and gives the customer an earlier delivery. If, on the other hand, he allows too little time, a nearly or quite useless product results for any purpose for which a malleable casting is usually required. The subject of annealing times has been systematically studied by at least three prominent universities beside the consideration it has received by producers. The process is quite thoroughly understood, and any improvements in annealing time can come only under certain well defined conditions. The purchaser would seem to serve his own interests best by not exerting pressure on the vendor toward a reduction in this time, for by doing so, he runs a constant risk of obtaining inferior work. The manufacturer is fully conscious of the desirability of such reductions, to the extent of having spent thousands of dollars in investigations in this direction, and will from self interest alone be compelled to bend every effort toward such improvements.

While we are considering the problem of annealing, the moment is opportune to recur to the traditional misconceptions which have come down to us from the fathers, and to which reference was made early in this talk.

The annealing reaction proceeds at all points of the casting at once, and not from the outside in, as true of the European process. The surface metal is but very slightly more ductile, or stronger, than the center. The machining of castings does not, therefore, materially weaken them. The center of the castings is not ordinary cast iron, never was gray iron, and bears no relation to that metal. It is true that for various manufacturing reasons small castings usually anneal more easily than large ones, and are somewhat stronger per unit area. The differences are not great, however, and bear no relation to the misconceptions just referred to.

The Question of "Shrink"

The presence of shrinks in castings has been referred to already. While what here follows should be considered by the designing engineer rather than the purchasing agent, it may not be altogether inopportune to bring to the notice of the latter the fact that, in every case where shrinkage occurs, the designer at least shares in the responsibility. Castings of such form that the various portions cool at very uneven rates, or which have heavy sections so situated that feeders cannot be applied, will suffer from such defects almost in spite of anything the foundryman can

*Manager of Research, National Malleable & Steel Castings Co., Cleveland. From the paper presented at the tenth annual convention of the National Association of Purchasing Agents, Milwaukee, May 25-28.

do. Until draftsmen view their creations, not only from the viewpoint of application, but also of manufacture, much trouble and expense will be incurred.

Whenever possible, when new designs are contemplated, competent advice should be sought from the producer and certainly his advice as to gating, and so on, should be implicitly accepted. No advantage

whatever results from making him do metallurgical tricks. It is distinctly in the writer's knowledge that a large consumer is today buying a casting which only two or three producers can manufacture with any satisfaction. Such a condition, although, perhaps, pleasing to the fortunate sellers, is certainly not to the buyer's advantage.

MAY STEEL OUTPUT

Decrease from April Only 4972 Tons or 3.6 Per Cent in Daily Rate

The steel ingot output of the country in May at 133,010 gross tons per day reflected a check in the sharp decline registered in April. The May output was only 3.6 per cent less than the April, contrasting with a decline in April of 14.5 per cent. Last month's production was also much larger than that of May, 1924, indicating that the sharp slump of last year is not being repeated. March outputs of the two years were substantially identical, but May last year was 40 per cent off from March, while May this year was 17½ per cent off.

The statistics of the American Iron and Steel Institute show that the May output of the companies which made 94.43 per cent of the country's total in 1924 was 3,265,628 tons. Assuming that the 5.57 per cent not reporting produced at the same rate, a total May production is indicated of 3,458,253 tons. The corresponding annual rate is about 41,365,000 tons or about 76.5 per cent of capacity. In April the corresponding figure was approximately 79.5 per cent.

The table gives the production by months of the different kinds of steel, together with the estimated daily rate for all companies.

Monthly Production of Steel Ingots. Reported by companies Which Made 94.43 Per Cent of the Steel Ingot Production in 1924

Months,	Open-		All	Calculated	Approximate
1925	Hearth	Bessemer	Other	Monthly	Daily
				Production	Production
				All	All
				Companies	Gross Tons
Jan.	3,262,748	689,996	11,960	4,198,564	155,502
Feb.	2,931,964	602,042	13,014	3,756,243	156,510
March ...	3,336,169	614,860	13,633	4,198,520	161,482
April ...	2,857,802	515,715	14,182	3,587,524	137,982
May ...	2,754,130	497,708	13,790	3,458,253	133,010
5 Mos. ...	15,142,813	2,920,321	66,579	19,199,104	148,830
1924					
Jan.	2,766,534	667,032	12,577	3,649,913	135,182
Feb.	2,902,641	695,905	14,085	3,826,246	153,050
March ...	3,249,783	706,801	15,260	4,206,699	161,796
April ...	2,575,788	573,381	12,356	3,348,466	128,787
May ...	2,060,896	425,099	6,648	2,640,034	97,779
5 Mos. ...	13,555,642	3,068,218	60,926	17,671,358	134,896
June ...	1,637,660	310,070	2,622	2,065,676	82,627
July ...	1,525,912	241,880	5,162	1,877,789	72,223
Aug. ...	2,042,820	361,781	5,764	2,552,891	98,188
Sept. ...	2,252,976	409,922	6,864	2,827,625	108,755
Oct. ...	2,505,403	438,468	7,058	3,125,418	115,756
Nov. ...	2,479,147	459,349	8,403	3,121,149	124,846
Dec. ...	2,811,771	546,506	11,707	3,569,251	137,279
Total ...	28,811,331	5,836,194	108,506	36,811,157	117,984

New Officers of British Iron and Steel Federation

The National Federation of Iron and Steel Manufacturers, London, England, recently elected two prominent men as its president and vice-president.

Cyril Lloyd, who was elected president, is a son of the late Howard Lloyd of Lloyds Bank. After serving a practical apprenticeship at the works of Williams & Robinson, Ltd., of Rugby, he spent some time in electrical engineering work in London and in 1906 joined the board of the old established firm of N. Hingley & Sons, Ltd., one of the leading firms in the South Staffordshire wrought iron trade. He succeeded Sir George Hingley as chairman of that company on the latter's death in 1918. He is also vice-chairman of Lloyd's British Testing Co., Ltd., and is a director of the Great Western Railway. He is chairman of the South Staffordshire Iron Masters Association.

For vice-president, the Federation chose Benjamin

Talbot, managing director of the Cargo Fleet Iron Co., the South Durham Iron and Steel Co., the Seaton Carew Iron Co., Ltd., and several other iron and steel companies in the North East area. His name is best known to metallurgists as the inventor of the continuous steel or Talbot furnace, which he invented while he was manager of the Pencoyd Iron Works, Pencoyd, Pa., and which has been quite largely adopted both in America and Europe. In 1900 his first paper before the Iron and Steel Institute was a description of this process. Mr. Talbot is a native of Shropshire, England, and obtained his earliest experience at the Castle Ironworks, London, owned by his father. In 1890 he became superintendent of the Southern Iron & Steel Co., Chattanooga, Tenn., and in 1893 of the Pencoyd works in Pennsylvania. He returned to England in 1900 but makes frequent trips to the United States.

D. M. Rugg Heads Blast Furnace and Coke Oven Association

Dan M. Rugg, superintendent Hanna-Donner Coke Corporation, Buffalo, who has served as vice-president of the Eastern States Blast Furnace and Coke Oven Association for the past year and the previous year was secretary-treasurer, was elected president at the spring meeting of the association held at the Youngstown Country Club, Youngstown, Ohio, June 4. Harry E. McDonnell, superintendent the blast furnace department, Weirton Steel Co., Weirton, W. Va., who has been secretary-treasurer for the past year, was elected vice-president, and the new secretary-treasurer is Charles A. Meissner, superintendent of the by-product coke plant of the Weirton Steel Co.

This annual gathering of the association, which was an all day affair with the dinner and formal meeting preceded by outdoor sports, brought together about 170 blast furnace and coke oven plant executives and guests from various producing centers in the eastern half of the United States. Organized July 1, 1921, its membership has grown from about 75 to 196 and there are few, if any, blast furnace or coke oven plants in the area mentioned that now are not included in the roll. It has brought together the plant officials, and there is no doubt that the contacts have been beneficial to all, since at each of the four meetings each year there has been an address of interest and no written transcript of talks or discussions ordinarily being permitted, those participating have been freed of the restraint sometimes imposed by stenographic reports.

F. W. Sperr, chief chemist Koppers Co., Pittsburgh, was the speaker at this meeting. His subject was, "The Purification of Coke Oven Gas," in which he made special reference to the preparation of gas for open-hearth furnaces.

Philadelphia Foundrymen's Association Meet

Members of the Philadelphia Foundrymen's Association held a dinner and meeting Wednesday evening, June 10, at the Manufacturers' Club, Philadelphia. An address was made by R. R. Clarke, superintendent of alloys foundry, General Electric Co., Erie, Pa. His subject was "The Foundry Physicist," doubly interesting by reason of the speaker's long connection with these foundries which produce in great quantity and variety. This is the last meeting until October.

New members elected at the May meeting were Barrows & Co., R. E. Blazo, pig iron sales department, Bankers Trust Building, and Dr. C. E. Palmer, 1311 North Broad Street.

MACHINERY ON CREDIT

Distinction Made with Reference to Consumption Goods—Some Exceptions

WASHINGTON, June 15—Discussing the exporting of machinery on credit, Walter H. Rastall, chief industrial machinery division, Department of Commerce, points out the difference between consumption goods and capital as represented in equipment. In the former, short term credits permit the buyer to "turn around"; they thus make for good business. In the latter a different condition prevails, which, he explained, in part, as follows:

Factory Equipment vs. Merchandise

At a recent foreign trade convention, at least two speakers, in discussing export trade, made the statement that no manufacturer should consider going into the export business unless prepared to grant credits to foreign buyers. Such sweeping statements are unfortunate and unfair unless commodities are mentioned, as terms of sales may be applied to some are not appropriate for others. I happen to know that one of these speakers had in mind office supplies, and the other shoes. Obviously, shoes or collars, when shipped abroad, will ordinarily pass into the hands of dealers who may reasonably expect to convert stocks into cash in time to meet the maturing obligations.

In contrast to this machinery, as purchased by a factory, railroad or mine, becomes plant investment and 90 days credit should be of little importance to the buyer. If the promoters of the enterprise are to have the cash with which to pay, three months after delivery, presumably they have it when delivery is made. If not, it is possible that they are overextended and not only lack the capital required to pay for the machinery but also working capital as well. Quite probably, it is no kindness to furnish such buyers with machinery on credit, as the enterprise may be doomed from

its inception. It is much better business for all concerned to require the promoters to find funds fully to equip the enterprise before passing beyond the stage where equipment is purchased.

In some instances it is felt that machinery can be sold on long credits in such a way as to enable the buyer to pay for it out of profits. But for the ordinary transaction this would probably, in effect, mean that the machinery manufacturer virtually becomes a stockholder in the enterprise, with the further restriction that he would not be in a position to receive dividends. He would be carrying his full share of the risk without being in a position to receive a corresponding share of the profit. Transactions of this sort approach the situation of "heads you win, tails I lose"—a policy that can scarcely be recommended.

Credits on Certain Machinery Transactions Necessary

Still, it undoubtedly is true that by extending credits, particularly in certain countries, a largely increased volume of export business can be secured, and there are reasons why machinery purchasers in these countries wish to buy on credit. For example, in Brazil there is great need for capital, if industry is to be developed. As yet no business processes have been developed there to take care of the financing of industry through longtime industrial loans in foreign countries, and there is no means for raising capital through investment securities in the local market. Consequently, industrialists in Brazil find it necessary to raise all of their own capital or else arrange to finance themselves through their suppliers.

When a manufacturer in the United States would raise capital for any industry, by the sale of mortgage bonds, a similar manufacturer in Brazil must plan to reach the same end by pushing the burden on to the machinery dealer. Otherwise expressed, the demand from Brazil and certain other countries for long-time credits in connection with machinery transactions represents a demand on the part of the industrialist there that the machinery manufacturers shall participate in his business to the extent of the investment represented by the deferred payments on the machinery contract.

National Enameling Holds Sales Conference

Eleven district sales representatives of the Granite City Steel Works of the National Enameling & Stamping Co. attended a sales meeting of the company at Granite City, Ill., May 28 and 29. The morning of the first day was given over to an inspection tour of the mills, while the remainder of the day and the next morning were taken up with questions pertaining to sales problems, policies, etc. Baseball and golf occupied the time on Friday afternoon.

Laurence F. Miller, general manager of sales, gave the sales representatives a dinner at the University Club, St. Louis, followed by attendance at the Municipal Opera in Forest Park on Thursday night, while the company was host at a dinner at Coronado Hotel on Friday night to the sales representatives and officials of the operating departments.

George W. Niedringhaus, chairman of the board of directors of the company, presided at the latter meeting. W. W. Hanlon, general superintendent of the steel works, gave a brief history of the development and growth of the manufacturing end of the business during his service of 30 years. Hayward Niedringhaus, managing director of the steel works, suggested ways and means whereby the selling organization could be of help in solving the problems of the operating department.

Railroad Consumption of Steel Last Year

WASHINGTON, June 9—The closeness of the estimate in the annual number of THE IRON AGE of Jan. 1 as to railroad consumption of steel is disclosed by figures issued by the Bureau of Railway Economics, and reported on page 1661 of THE IRON AGE of June 4. The bureau has announced the result of its annual study based on special reports of the carriers. It estimates that more than 27 per cent of the total steel products in 1924 was purchased either directly by the railroads or for them through equipment manufacturers.

THE IRON AGE in its annual number in speaking of railroad consumption, said that "the returns indicate that the railroad percentage is nearly 28 for 1924, against something more than 27 for 1923."

Activities in New England

The Gurney Heater Mfg. Co., Framingham, Mass., is gradually increasing its daily foundry melt, with 100 tons the objective. It is now melting 90 tons per day, contrasted with less than 70 tons a month or so ago. The increase is being made possible by a readjustment of plant departments, without plant extensions, so as to give larger molding area.

Many departments in the Mead-Morrison Mfg. Co., East Boston, builder of labor saving material handling equipment, are running 100 per cent. The least active department is operating at about 70 per cent of capacity. The company reports customers buying carefully and with discrimination. Competition is keen, but inventories are low, and there is a lot of contemplated work ahead of the company.

A crude oil combustion engine of the semi-Diesel type is in the course of development at the A. H. Nilson Machine Co., Bridgeport, Conn., plant. The engine is of foreign origin, but had been materially improved upon and shortly will be placed on the American market. The engine is designed chiefly for heavy duty farm work and similar requirements.

The Draper Corporation, Hopedale, Mass., maker of textile machinery, is operating its foundry on a 5-day per week schedule, contrasted with 5½ days. The curtailment is in line with the usual summer schedule, but is a little earlier than usual due to the hot weather. The weekly production by the foundry will be maintained even on the shorter schedule.

"An Investigation of the Molding Sand Resources of Illinois" is the title of a report by M. S. Littlefield, published by the Illinois State Geological Survey in cooperation with the engineering experiment station of the University of Illinois.

Iron and Steel Markets

SOME GAIN IN VOLUME

Steadiness of Operations in Contrast with the Slump of 1924

Lower Pig Iron and Scrap—Fresh Rail and Line Pipe Buying

The steel trade finds encouragement in the moderate increase in volume of new business that June has brought, in comparison with early May. At the same time, steel works output has held at substantially the rate of the last two weeks of May. Prices, however, have given fresh indications of the narrow operating margins of the mills under continued small-lot buying, and plates, sheets, cold finished steel, wire nails and steel scrap have gone lower.

It is now quite evident that the May advances in heavy melting scrap were due to conditions in that trade and were not prophetic of the general market.

Chicago furnishes one measure of the improvement in Western demand in an estimate that mills in that district which roll the heavier finished products booked 20 per cent more new business in May than in April. In all districts the steadiness of operations is marked, in view of the oncoming of the mid-summer season.

The official statistics of steel ingot output in May showed a larger total than was to be expected from the weekly estimates of capacity active. At 3,458,253 tons, or 133,010 tons to the working day, the falling off from the daily rate in April (137,982 tons) was only 3.6 per cent.

The May figures emphasize again the course of the industry in the second quarter of 1925, in contrast with that in the same quarter last year. From the peak production of 161,796 tons a day in March, 1924, there was a precipitate drop of 40 per cent to 97,779 tons a day in May. From 161,482 tons a day in March, this year, the falling off to 133,010 tons a day in May was but 17.5 per cent.

Specific items in the increased volume of new orders in the past week include 62½ miles of 16-in. pipe for the Oklahoma Natural Gas Co., and 12 miles of 20-in. pipe for the Hope Natural Gas Co.

There was also a total of 22,100 tons of rails placed by the Southern Railway system—1200 tons going to the South Chicago mill, 2900 tons to Sparrows Point, and 18,000 tons to Ensley, Ala., included in which was 3000 tons for the Mobile & Ohio. Earlier in the year the Southern Railway ordered 8200 tons.

The prospect is good that part of the 150,000 tons of rails on which the Government Railways of South Africa took bids last week will come to this country. A British mill got 25,000 tons of 80-lb. rails and a Belgian mill 20,000 tons of 45-lb. rails, leaving 105,000 tons yet to be awarded. The Steel Corporation is just shipping the last of a 24,000 ton order for the same lines taken late last year.

For 1100 steel underframes for the Great Northern and 700 for the Pacific Fruit Express, 7000 tons of steel will be bought at Chicago. The

Southern Railway will require 2300 tons for the repair of 1000 cars.

Sheet and tin plate mills employing union workers will start the new scale year in July on substantially the present wage basis, in accordance with an agreement just reached at Atlantic City.

At Pittsburgh and in Northern Ohio the semi-finished steel market is less stable. Sheet mills are trying for a \$33 price on sheet bars, in view of the falling off in sheet values since the \$35 basis was fixed on their second quarter contracts. Semi-finished steel is affected by the weakness in Valley pig iron and by the fact that steel scrap has receded to \$17.

The United Gas & Improvement Co., which inquired for 2000 tons of sheet steel piling for an Ohio River dam, is reported to have placed the order—a large one for this product—with a Pittsburgh mill.

While not up to the May rate, June pig iron buying in the Middle West has included some large lots. Chicago had a 150,000-ton week and Cleveland sales were 69,000 tons. In the Pittsburgh district the 30,000 tons taken by a maker of sanitary products brought out the lowest price since the war—\$18 at Valley furnace for No. 2 foundry iron. A pipe foundry purchase of 15,000 tons at \$20, base, was the largest transaction in the East in several months.

Equaling the lowest figure in more than three years, THE IRON AGE pig iron composite price has fallen to \$19.21, from \$19.42 last week. Not since April 11, 1922, when it was \$19.14, has the price been lower. It last stood at \$19.21 on Nov. 3, 1924.

Lower than at any time in the past 29 months, THE IRON AGE finished steel composite price, at 2.446c. per lb., is at the level of early January, 1923. Last week it was 2.460c., having held that figure for more than a month.

Pittsburgh

Bookings Sustain Operations but Prices Still Weak

PITTSBURGH, June 9.—Steel buyers continue the practice of buying frequently in small lots for early delivery, and while the manufacturers are unable under such a demand to schedule their plants more than a week ahead, the local bookings are sufficient to sustain the recent rate of operations. As ingot production now has been practically stationary for four weeks, it is even more commonly held than a week ago that output and demand now are very well balanced.

In most directions, orders are more numerous than they were last week and the aggregate bookings of finished steel for the month to date are running somewhat ahead of the same period last month, which in turn made a better showing than the month before. From the standpoint of mill schedules, the business leaves something to be desired since the industry is not yet fully accustomed to such short range planning of operations as the current demand entails. At the same time, the frequency of the purchases suggests that consumers are constantly cutting into any accumulations they built up over the fore part of the year.

The nice balance that exists between present pro-

A Comparison of Prices

Advances Over the Previous Week in Heavy Type, Declines in Italics
At date, one week, one month, and one year previous

For Early Delivery

Pig Iron, Per Gross Ton:	June 9, 1925	June 2, 1925	May 12, 1925	June 10, 1924
No. 2X, Philadelphia...	\$21.26	\$21.26	\$21.76	\$21.26
No. 2, Valley Furnace...	18.00	18.50	19.00	20.00
No. 2, Southern, Cin'tit...	24.05	24.05	24.05	24.05
No. 2, Birmingham, Ala.†	20.00	20.00	20.00	20.00
No. 2 foundry, Chicago*	20.00	20.50	21.00	22.00
Basic, del'd, eastern Pa...	21.50	21.50	21.00	21.00
Basic, Valley furnace...	18.00	18.25	18.50	20.00
Valley Bessemer, del. P'gh.	20.76	20.76	21.76	23.26
Malleable, Chicago*	20.00	20.50	21.00	22.00
Malleable, Valley	18.50	18.50	19.00	20.00
Gray forge, Pittsburgh...	19.26	19.76	20.26	21.26
L. S. charcoal, Chicago...	29.04	29.04	29.04	29.15
Ferromanganese, furnace...	115.00	115.00	115.00	107.50

Rails, Billets, etc., Per Gross Ton:	June 9, 1925	June 2, 1925	May 12, 1925	June 10, 1924
O.-h. rails, heavy, at mill.	\$43.00	\$43.00	\$43.00	\$43.00
Bess. billets, Pittsburgh...	35.00	35.00	35.50	38.00
O.-h. billets, Pittsburgh...	35.00	35.00	35.50	38.00
O.-h. sheet bars, P'gh.	35.00	35.00	37.00	40.00
Forging billets, base, P'gh.	40.00	40.00	40.50	43.00
O.-h. billets, Phila.	40.17	40.17	40.67	43.17
Wire rods, Pittsburgh...	46.00	46.00	46.00	48.00
Skelp, gr. steel, P'gh, lb.	1.90	2.00	2.00	2.20
Light rails at mill.	1.70	1.70	1.75	1.90

Finished Iron and Steel,

Per Lb. to Large Buyers:	Cents	Cents	Cents	Cents
Iron bars, Philadelphia...	2.22	2.22	2.22	2.42
Iron bars, Chicago...	2.00	2.05	2.10	2.25
Steel bars, Pittsburgh...	2.00	2.00	2.00	2.20
Steel bars, Chicago...	2.10	2.10	2.10	2.25
Steel bars, New York...	2.34	2.34	2.34	2.54
Tank plates, Pittsburgh...	1.90	2.00	2.00	2.20
Tank plates, Chicago...	2.20	2.20	2.20	2.35
Tank plates, New York...	2.24	2.24	2.24	2.34
Beams, Pittsburgh...	2.00	2.00	2.00	2.20
Beams, Chicago...	2.20	2.20	2.20	2.35
Beams, New York...	2.34	2.34	2.34	2.44
Steel hoops, Pittsburgh...	2.40	2.40	2.40	2.75

*The average switching charge for delivery to foundries in the Chicago district is 61c. per ton.
†Silicon, 1.75 to 2.25. ‡Silicon, 2.25 to 2.75.

On export business there are frequent variations from the above prices. Also, in domestic business, there is at times a range of prices on various products, as shown in our market reports on other pages.

Sheets, Nails and Wire, June 9, 1925	June 2, 1925	May 12, 1925	June 10, 1924
Per Lb. to Large Buyers:	Cents	Cents	Cents
Sheets, black, No. 28, P'gh.	3.20	3.20	3.20
Sheets, black, No. 28, Chicago dist. mill.	3.30	3.40	3.40
Sheets, galv., No. 28, P'gh.	4.25	4.25	4.30
Sheets, galv., No. 28, Chicago dist. mill.	4.35	4.50	4.50
Sheets, blue, 9 & 10, P'gh.	2.30	2.35	2.40
Sheets, blue, 9 & 10, Chicago dist. mill.	2.40	2.50	2.50
Wire nails, Pittsburgh...	2.70	2.70	2.75
Wire nails, Chicago dist. mill.	2.75	2.85	2.85
Plain wire, Pittsburgh...	2.50	2.50	2.50
Plain wire, Chicago dist. mill.	2.60	2.60	2.60
Barbed wire, galv., P'gh.	3.45	3.45	3.45
Barbed wire, galv., Chicago dist. mill.	3.55	3.55	3.55
Tin plate, 100 lb. box, P'gh.	\$5.50	\$5.50	\$5.50

Old Material, Per Gross Ton:

Carwheels, Chicago...	\$17.75	\$16.75	\$16.00	\$15.50
Carwheels, Philadelphia...	17.00	17.00	17.00	17.00
Heavy steel scrap, P'gh.	17.00	17.50	17.00	16.00
Heavy steel scrap, Phila.	15.00	15.00	14.50	15.00
Heavy steel scrap, Ch'go.	16.00	16.00	14.75	13.50
No. 1 cast, Pittsburgh...	17.00	17.50	17.50	17.00
No. 1 cast, Philadelphia...	17.50	17.50	17.00	17.50
No. 1 cast, Ch'go (net ton)	17.50	17.50	17.00	17.00
No. 1 RR. wrot. Phila.	18.00	17.50	17.50	16.50
No. 1 RR. wrot. Ch'go (net)	15.25	14.50	13.25	11.50

Coke, Connellsville,

Per Net Ton at Oven:	June 9, 1925	June 2, 1925	May 12, 1925	June 10, 1924
Furnace coke, prompt...	\$2.75	\$2.85	\$3.00	\$3.25
Foundry coke, prompt...	3.75	4.00	4.00	4.50

Metals,

Per Lb. to Large Buyers:	Cents	Cents	Cents	Cents
Lake copper, New York...	13.62½	13.62½	13.62½	12.87½
Electrolytic copper, refinery	13.25	13.37½	13.37½	12.50
Zinc, St. Louis...	7.00	7.05	6.97½	5.82½
Zinc, New York...	7.35	7.40	7.32½	6.17½
Lead, St. Louis...	8.25	8.25	7.62½	6.95
Lead, New York...	8.50	8.60	7.97½	7.12½
Tin (Straits), New York...	55.37½	54.87½	54.50	42.00
Antimony (Asiauc), N. Y.	16.50	17.00	17.50	8.35

THE IRON AGE Composite Prices

June 9, 1925, Finished Steel, 2.446c. Per Lb.

Based on prices of steel bars, beams, tank plates, plain wire, open-hearth rails, black pipe and black sheets. These products constitute 88 per cent of the United States output of finished steel.	June 2, 1925, 2.460c. May 12, 1925, 2.460c. June 10, 1924, 2.610c. 10-year pre-war average, 1.689c.
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June 9, 1925, Pig Iron, \$19.21 Per Gross Ton

Based on average of basic and foundry irons, the basic being Valley quotation, the foundry an average of Chicago, Philadelphia and Birmingham.	June 2, 1925, \$19.42 May 12, 1925, 20.63 June 10, 1924, 20.86 10-year pre-war average, 15.72
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High	Low
1923 2.824c., April 24 \$30.86, March 20	1925 2.446c., June 9 \$19.21, June 9
1924 2.789c., Jan. 15 \$22.88, Feb. 26	1924 2.460c., Oct. 14 \$19.21, Nov. 8
1925 2.560c., Jan. 6 \$22.50, Jan. 13	1925 2.446c., Jan. 2 \$20.77, Nov. 20

duction and demand is not present in a comparison between capacity and demand, however, and in the effort of manufacturers to maintain as economical an operation as possible, competition for business is sharp and this means some price instability. The week has developed plainly that the recent quotation of 2.10c. base, Pittsburgh, on plates was merely a nominal one, because tonnages of rather moderate size have sold at 2c., while on comparatively attractive lots mills here have gone as low as 1.90c. No further recessions are noted in sheet prices, but at the same time competition for business is sufficiently keen to prevent any stiffening up of the averages. Cold rolled strip prices continue to weaken. There is some price uncertainty in semi-finished steel not only because of pressure from

consumers for prices that will let them out at a profit on today's finished steel prices, but because of the weakness of the pig iron market and the fact that the scrap market has failed to maintain recent advances.

With foundry iron now selling at the lowest price in this market since the war, there naturally has been some increase in consumer interest and including one lot of 30,000 tons for shipment over the last half of the year, the week's business has been close to 35,000 tons in that grade. On the larger tonnage \$18, Valley furnace, for No. 2 was the ruling price and while a higher price is now demanded, there is some question whether other large buyers who have not covered against their third quarter and last half requirements, will be willing to pay more. The price has gone down

because producers let their stocks become unwieldy and low prices were necessary in the correction of the supply situation. A week ago \$18 was possible from heavy melting steel scrap, while today \$17 is as much as can be obtained. Continued weakness in coke prices is a reflection of the downward trend in pig iron prices.

Pig Iron.—The idea that the market was scraping bottom has not been sustained by the developments in the past week. The Standard Sanitary Mfg. Co. was able to secure 30,000 tons of foundry iron for shipment over the last half of this year at \$18, Valley furnace, for No. 2, and instead of the usual silicon differential of 50c. a ton for No. 2X iron, secured not a little of that grade at only 25c. a ton more than the base grade. It was rather expected that this company would take an even larger tonnage, but on the one hand a number of producers refuse to go below \$18.50 for the base grade, while on the other, the company on a refiguring of its requirements decided not to buy so much as at first planned. Scattering tonnages of this grade, aggregating about 5,000 tons, have been sold during the week and most of it has been at \$18.50. Almost all producers now are quoting that price but there are a number of large consumers who have yet to buy and the news about the large lot at \$18 has had such wide circulation that producers have something of a problem before them in getting up their prices. Stocks in furnace yards were so large that it is doubtful if the business done in the past few weeks has been sufficient to fully correct the situation. Basic iron has eased off to \$18 not only because it is intrinsically worth no more than foundry iron, but because it has been freely offered at that price. The one important inquiry before the market, that from a West Virginia sheet maker, is said to have been closed at a price that is well below \$18, Valley furnace. Prices higher than \$19, Valley furnace, for Bessemer iron have disappeared in the past week, such business as has been done being at \$19. Malleable iron no longer is salable above \$18.50, Valley furnace. The Mary furnace, Sharon Steel Hoop Co., Lowellville, Ohio, started up this week after a suspension for relining and repairs. The furnaces of the Stewart Iron Co., Sharon, Pa., and the Perry Iron Co., Erie, Pa., will suspend production soon.

We quote Valley furnace, the freight rate for delivery to the Cleveland or Pittsburgh district being \$1.76 per gross ton:

Basic	\$18.00
Bessemer	19.00
Gray forge	\$17.50 to 18.00
No. 2 foundry	18.00 to 18.50
No. 3 foundry	17.50 to 18.00
Malleable	18.50
Low phosphorus copper free	27.75 to 28.00

Ferroalloys.—Interest is greater in third quarter and last half tonnages of ferromanganese, but buyers are feeling their way and inquiry is larger by far than actual sales. Domestic producers now seem to feel that they will be able to get the present quotation on tonnages for shipment over the last half of the year, but that depends on the course of the price of British material, and with the British steel industry running at a low rate it is possible British producers of ferromanganese may find it necessary to look to America for the disposal of a larger percentage than usual of their production. The one bullish price argument on ferromanganese is the high cost of ore. This, however, is said to be due less to a shortage than to the fact that British producers have paid high prices to keep the ore going to England. Some interest also is noted in spiegeleisen for shipment over the last half of the year; prices of this material show no change but are subject to some shading on desirable business. New business in 50 per cent ferrosilicon is very limited. Prices are given on page 1747.

Semi-Finished Steel.—Some brokerage inquiries for sheet bars have reached the market, one of them being for 10,000 tons. The effort is to secure them at \$33, Pittsburgh or Youngstown, and it would not occasion much surprise if it were successful, since that price is about all that nonintegrated sheet makers believe they should pay in order to get out whole at today's sheet prices. And they are not specifying with any freedom on contracts for this quarter carrying a price of \$35. Buyers also are pressing for lower prices on billets and slabs, as they claim the finished steel prices

do not allow much, if any, profit at \$35 for the semi-finished steel. These prices finding no particular basis in fresh sales, they are merely nominal. Wire rods are selling in small lots at \$46, base, Pittsburgh or Cleveland, buyers being careful not to stock them, with finished products unsteady in price. With plates selling as low as 1.90c., base, an attractive skelp order no doubt would bring out the same price. Prices are given on page 1747.

Wire Products.—The more common report still is of a rising tendency in the number of orders. But business still lacks the volume to give all producers a reasonably good plant operation and competition is sufficiently sharp to keep prices in buyers' favor. Jobbers and manufacturing consumers loaded up freely late last year and since have been such sparing buyers that they no doubt now have made holes in their stocks that need replenishment. Summer business in wire products probably will be above the average because of the very moderate spring buying. The mills have no backlogs worth noting and price concessions also are prompted by the fact that the territory of local mills is restricted by lower delivered prices by outside producers. Sales of nails in the Pittsburgh district at \$2.70, base, per keg represent a trifling loss compared with what would have to be taken in shipments to Cincinnati, Louisville and adjacent territory. Prices are given on page 1746.

Rails and Track Supplies.—The movement of track accessories is very slow in this market and while fairly heavy shipments of standard rails are being made on contracts, there is almost no demand for light rails. The latter find their principal use in the coal mines and that industry still is very much depressed. Prices do not change much. They are given on page 1746.

Tin Plate.—Hot weather over the past week has taken its toll of tin plate production. Few mills have been able to maintain scheduled operations and production of active units has suffered from the fact that the men could not stand up in the heat both in and outside of the mills. Marketwise, the situation is not materially changed. Manufacturers are well up with their contract obligations and new business is not heavy. The tomato crop of Indiana suffered from the frosts of two weeks ago, but that crop is doing well in other parts of the country and the general outlook for packing crops is quite as brilliant as it has been since early spring. One or two makers appear willing to make concessions on attractive business, but in a general way, there is close adherence to the regular quotation of \$5.50, per base box, Pittsburgh, for standard cokes.

Cold Finished Steel Bars and Shafting.—A quotation of 2.60c., base, Pittsburgh, has become so common lately, that now no serious effort is being made to obtain more. Automobile parts makers are fairly steady buyers, but are not buying ahead of their actual requirements and with no big orders coming from other consuming industries, potential producing capacity looms large by comparison with present demand. This explains the weakness of prices in the face of a firm market in hot-rolled bars. During the war there was a differential between hot and cold-rolled bars of \$25 a ton; today it is only \$12 a ton, and it will be further reduced if makers of hot-rolled bars hold to a decision to exact an extra of \$2 a ton on bars of screw stock analysis, as they have announced they will with the completion of present bookings. The price of ground shafting has been reduced \$2 per ton to 3c. base, f.o.b., mill, carload lots.

Hot-Rolled Flats.—The market is fairly active and firm at recent prices. They are given on page 1746.

Tubular Goods.—There is no complaint locally as to the movement of pipe. While jobbers are not ordering very far ahead, they are making steady demands upon the makers for oil country goods and, except from this immediate district, the orders for standard pipe are flowing in steadily. There is a fair sprinkling of line pipe orders, one of which calls for 62½ miles of 16-in. outside diameter 5/16-in. plain end pipe for the Oklahoma Natural Gas Co. and another for 12 miles of 20-in. pipe for the Hope Natural Gas Co. Pipe prices are holding better than any other finished product; there are concessions, but they are neither large nor

general enough to cause any revision of card discounts. Mechanical tubing is moving steadily to the automotive industry, but buying of boiler tubes is entirely hand-to-mouth. There is not as much firmness to the tube market as there is in pipe prices. Discounts are given on page 1746.

Sheets.—Buying is on a heavier scale than it was recently, the past week in point of orders and specifications being the best in the past two months with some makers in this district. While the more common tendency among makers is to name present prices only on business for shipment at convenience of mill, there are some who will take contracts at today's prices. There is much evidence in the size of the orders that buyers regard present prices as pretty low, but it cannot yet be said that pressure to sell has abated. This explains sales of black sheets as low as 3.10c., base, and of galvanized as low as 4.20c., base, in the face of more commonly quoted minimum prices of 3.20c. and 4.25c. The smaller producers are charged with making the lowest prices, but it is observed that the large makers no longer are content to stand by and let their customers go elsewhere. Makers of tin mill black plates are making a firm stand at today's prices and some will not take business for forward delivery at those prices. Prices are given on page 1746.

Steel and Iron Bars.—There is a steady well sustained demand for small lots of steel bars and makers have had no trouble in maintaining recent prices. Iron bars are steady in price and find a fair demand. Prices are given on page 1746.

Structural Material.—Prices are holding steadily in this district and the mills seem confident of being able to maintain them, as it is reported that a large amount of business is on the boards of the steel fabricating companies. Structural shops in this district are getting a fair amount of business, but it is not keeping pace with completed orders and the report still is that on new work competition is so sharp that there is almost no profit left. Maintenance of shop organizations rather than profits seems to be the aim of the steel fabricators at present. Plain material prices are given on page 1746.

Plates.—Open market prices have eased off to a range of 1.90c. to 2c., base Pittsburgh, higher quotations, which really were nominal, having disappeared. Barge, storage tank and line pipe business are providing a fair amount of plate tonnage, but not enough to go around and attractive tonnages now are placed without much trouble at 1.90c. with 2c. ruling on less desirable lots. Prices are given on page 1746.

Cold Rolled Strips.—This product still is much unsettled as to price. The regular quotation remains at 3.75c., base Pittsburgh or Cleveland, but as low as 3.50c. has been done, because there are a good many makers and competition for business is sharp.

Bolts, Nuts and Rivets.—Buyers are continuing a hand-to-mouth buying policy and while orders are coming in steadily, they are filled very promptly and the makers are not able to build up backlogs. Present discounts on bolts and nuts have been reaffirmed on third quarter business. Discounts and prices are given on page 1747.

Coke and Coal.—Coke prices continue to give ground. With blast furnaces that are in operation covered by contracts, there is almost no market for spot furnace coke and to dispose of such tonnages producers lately have had to go as low as \$2.75 per net ton at ovens and \$2.85 has been as high as any recent sales have been made. Only a few third quarter or last half contracts of furnace coke have been made so far. The latest business of this sort came from an Eastern maker of low phosphorus iron, who placed 5000 tons of coke running very low in phosphorus for third quarter, paying slightly more than \$3. On the ordinary run of coke, the contract price is down pretty well to \$3. Standard foundry coke has finally yielded to the competition of selected furnace coke and unselected 72-hr. coke, which has been selling lately at very low prices. On standard selected hand drawn foundry coke, the

spot market now is from \$3.75 to \$4.25 for good brands, against \$4 to \$4.50 recently. Supplies of coal are too ample to permit of any strengthening prices. Prices are given on page 1747.

Old Material.—Developments of the past week sustain the opinion that the recent rise in steel works grades of scrap was merely a flurry. Prices of heavy melting steel and of sheet scrap are down 50c. a ton and these grades find almost no demand even at the decline. Steel mill buying is almost nil and dealers who were short seem to have covered the tonnages they wanted. A few dealers went "long" for Steubenville, Ohio, delivery, paying up to \$18.25, only to find no demand and they have been trying since to sell their purchases for shipment elsewhere at the best prices obtainable. The heavy melting steel in the June Pennsylvania Railroad list sold at above \$18, but there is no mill in this district that would pay that price today. The best mill bid is \$17 and on a basis of bid and asked prices this grade now is quotable at \$17 to \$17.50. Compressed sheets are freely offered at \$16.50 and have sold to dealers at \$16.25. A few sales of the better grades of railroad steel are noted at \$20. The market is firmer to the extent of 50c. on machine shop turnings, short shoveling turnings and cast iron borings, but mixed borings and turnings, a blast furnace grade, have not shared this gain.

We quote for delivery to consumers' mills in the Pittsburgh and other districts taking the Pittsburgh freight rate as follows:

Per Gross Ton	
Heavy melting steel.....	\$17.00 to \$17.50
No. 1 cast, cupola size.....	17.00 to 17.50
Rails for rolling, Newark and Cambridge, Ohio; Cumberland, Md.; Huntington, W. Va., and Franklin, Pa.	18.00 to 19.00
Compressed sheet steel.....	16.00 to 16.50
Bundled sheets, sides and ends.....	15.00 to 15.50
Railroad knuckles and couplers.....	19.50 to 20.00
Railroad coil and leaf springs.....	19.50 to 20.00
Low phosphorus blooms and billet ends.....	22.00 to 22.50
Low phosphorus plate and other material.....	21.00 to 21.50
Railroad malleable.....	17.00 to 17.50
Steel car axles.....	20.00 to 20.50
Cast iron wheels.....	17.00 to 17.50
Rolled steel wheels.....	19.50 to 20.00
Machine shop turnings.....	13.50 to 14.00
Short shoveling turnings.....	13.50 to 14.00
Sheet bar crops.....	20.00 to 20.50
Heavy steel axle turnings.....	16.50 to 17.00
Short mixed borings and turnings.....	13.00 to 13.50
Heavy breakable cast.....	15.50 to 16.00
Stove plate.....	13.50 to 14.00
Cast iron borings.....	13.50 to 14.00
No. 1 railroad wrought.....	14.00 to 14.50
No. 2 railroad wrought.....	17.00 to 17.50

Charles M. Smith Retires from Pig Iron Business

Charles M. Smith, for 29 years connected with the Colonial Iron Co., whose blast furnace is at Riddlesburg, Pa., has resigned from the presidency of that company. Although he has been elected chairman of the board of directors he has virtually retired from the pig iron business. He has also disposed of Henry H. Adams & Co., 149 Broadway, New York, a pig iron selling agency of which he was sole owner, to the Colonial Iron Co. H. H. Adams, a director of the Colonial Iron Co., succeeds Mr. Smith as president. John M. Reynolds continues as vice-president, John L. Roberts as treasurer, William D. Norman as assistant treasurer and Frederick G. Gottsch as secretary.

Henry H. Adams & Co., which was acquired by Mr. Smith in 1917, was established in 1868 and has been the sales agency for the Colonial Iron Co. since 1898. No change in the name of the company is contemplated. Mr. Smith will temporarily make his headquarters at 149 Broadway, New York.

Pilling & Co., pig iron, coal and coke, whose Philadelphia office is now located in the Bankers' Trust Building, that city, will move next week to suite 1710 in the Franklin Trust Building, 1500 Chestnut Street, Philadelphia.

Chicago

Improved Steel Buying Continues—150,000 Tons Pig Iron Sold

CHICAGO, June 9.—Local mills rolling the heavier finished steel products booked 20 per cent more new business in May than in April. The gradual improvement which commenced early in May is being maintained in June. The increasing number of orders calling for early delivery is indicative of the depletion of consumers' stocks and the necessity for replenishment. With relatively few exceptions users are not committing themselves for any great distance ahead but are confining their purchases to current needs. At the same time there is little effort on the part of important buyers to drive prices to lower levels, and there is little evidence of price cutting on plates, shapes or bars. Soft steel bars are now on a single price basis of 2.10c., and are firm at that figure.

The output of the leading mills rolling the heavier products is unchanged. An accident at Indiana Harbor adversely affected ingot output for a few days, but without causing any curtailment in mill operations. The foremost producer continues to operate at 88 per cent of ingot capacity.

Sheet prices have again given ground and with demand unsatisfactory Western output probably does not exceed 50 per cent of capacity. Wire products remain weak and wire nails have definitely declined \$2 a ton to \$2.75, district mill, while cement coated nails are available at \$2, district mill. Cold finished steel bars and shafting have receded \$2 a ton to 2.60c. per lb., Chicago. Bar iron has declined to 2c., Chicago, and rail steel bars, cold rolled strip and large rivets have also found lower levels.

Pig iron sales for the week are estimated at close to 150,000 tons with concessions of not more than 50c. a ton on the largest sales.

Sustained building activity is evidenced by liberal awards and inquiries for both structural steel and concrete bars. Moreover building permits in Chicago for May at \$42,000,000 were the largest for any May in history. Railroad car buying is at a low ebb, but the St. Paul is expected to close shortly for repairs on 1400 stock cars. The Southern Railway placed 1200 tons of rails with the Gary mill.

Pig Iron.—Sales of pig iron during the past three weeks are estimated at close to 250,000 tons and probably more than half of that tonnage has been placed within the past ten days. A large portion of the tonnage recently booked has gone at \$20.50, base furnace, and so far as can be learned the best that has been done even on the largest transactions has been \$20, base. Inquiry is heavy and some of the pending tonnages are large. In many cases deliveries are asked for not only through the third quarter but throughout last half. An Illinois melter is inquiring for 8000 tons of foundry iron and a local user for 5000 tons of foundry and malleable. A Milwaukee melter wants 2000 tons of foundry and an Illinois user 1800 tons. Other large pending tonnages include 1500 tons of foundry for a Chicago melter, 1400 tons of foundry and malleable for another local user, and 1200 tons of malleable for a Wisconsin consumer. An Indiana melter who was in the market for 3500 tons of malleable and 4500 tons of foundry, placed his business with furnaces east of here. In intermediate territories where the competition of outside producing centers is encountered, Chicago producers have been forced to quote lower base prices than are current here. Little Southern foundry is finding its way into this territory, but the all rail price of \$24.01, delivered, has been beaten by more than \$1 a ton on material for water and rail shipment. A Michigan melter has closed for 750 tons of 10 per cent silvery at \$28, Jackson county furnace. A western Illinois buyer has ordered 200 tons of 6 per cent silvery. A local buyer has closed for 150 tons of 10 per cent. An inquiry for 100 tons of low phosphorus iron is before the trade. There have been no recent sales of this product, but less than \$32, delivered, has been

quoted. In view of the absence of sales, the appended quotation on 14 to 16 per cent electric ferrosilicon must be regarded as nominal. Carload lots of charcoal have been sold at unchanged prices.

Quotations on Northern foundry, high phosphorus, malleable and basic irons are f.o.b. local furnaces and do not include an average switching charge of 61c. per ton. Other prices are for iron delivered at consumers' yards.

Northern No. 2 foundry, sil. 1.75 to 2.25.....	\$20.00 to \$20.50
Northern No. 1 foundry, sil. 2.25 to 2.75	20.50 to 21.00
Malleable, not over 2.25 sil.....	20.00 to 20.50
Basic	20.00 to 21.00
High phosphorus	20.50 to 21.00
High Superior charcoal, averaging sil. 1.50, delivered at Chicago	29.04
Southern No. 2, sil. 1.75 to 2.25..	24.01
Low phos., sil. 1 to 2 per cent, copper free	32.65
Silvery, sil. 8 per cent.....	31.29
Electric ferrosilicon, 14 to 16 per cent	43.42

Ferroalloys.—Two current inquiries for ferromanganese call for one thousand tons and one hundred tons respectively. Small sales of 50 per cent ferrosilicon have been negotiated at \$85, delivered. Spiegel-eisen is quiet, but the lowest current quotation is \$39.04, delivered.

We quote 80 per cent ferromanganese, \$122.56, delivered; 50 per cent ferrosilicon for 1925 delivery, \$85, delivered; spiegeleisen, 18 to 22 per cent, \$39.04, delivered.

Plates.—Little new railroad car buying has developed and fresh inquiries have not progressed beyond the rumor stage. The release of an inquiry for 20,000 cars by the Chesapeake & Ohio is said to be dependent only upon approval of the Van Sweringen mergers. The Great Northern is in the market for 1100 steel underframes requiring 4500 tons and the Pacific Fruit Express will buy 700 additional underframes, taking 2500 tons. The Southern Railway is inquiring for repairs on 1000 freight cars, calling for 2300 tons of steel. Miscellaneous inquiries for oil storage tanks in Texas and Kansas involve a total of 4000 tons of plates. Prices on tank plates are unchanged.

The mill quotation is 2.20c., Chicago. Jobbers quote 3.10c. for plate out of stock.

Structural Material.—Fabricating awards for the week are numerous and call for 4700 tons, while fresh inquiries aggregate nearly 11,000 tons. Building activity shows no signs of recession. Mill bookings in plain material are increasing, but orders are confined to tonnages for early delivery. Mill prices are unchanged, but firmer.

The mill quotation on plain material is 2.20c., Chicago. Jobbers quote 3.10c. for plain material out of warehouse.

Bars.—New business in soft steel bars continues to show an increase in the aggregate, indicating that users are depleting their stocks and must replenish. In most cases current orders are confined to relatively small tonnages calling for early shipment, although a few of the farm equipment manufacturers have placed third quarter contracts for both soft steel and rail steel bars, this being in preparation for their fall production work, which will commence late in August. Demands from the automotive industry for both soft steel and alloy steel bars are unabated. Soft steel bars are firm at 2.10c., Chicago. Bar iron has declined to 2c. Chicago, and mills are having difficulty in arranging rollings owing to the fact that current orders are small and of a heterogeneous character. Rail steel bars range from 2c. to 2.10c., mill, and as low as 1.90c. has been done in exceptional cases.

Mill prices are: Mild steel bars, 2.10c.; common bar iron, 2c., Chicago; rail steel, 2c. to 2.10c., Chicago mill.

Jobbers quote 3c. for steel bars out of warehouse. The warehouse quotations on cold-rolled steel bars and shafting are 3.80c. for rounds and hexagons and 4.30c. for flats and squares; 4.15c. for hoops and 3.65c. for bands.

Jobbers quote hard and medium deformed steel bars at 2.60c. to 2.70c.

Rails and Track Supplies.—The Southern Railway has placed a considerable tonnage of rails, of which 1200 tons was awarded to the Gary mill. The Missouri-Kansas-Texas has ordered 1000 tons of tie plates from the Scullin Steel Co. and the Illinois Central is in the

market for 2500 tons. Local bookings of track supplies during the week aggregate 2500 tons of angle bars, 10,000 kegs of spikes and 5000 kegs of bolts. Railroads are pressing for rail deliveries to a greater extent than a month ago, and are specifying against their fastening contracts rather freely.

Standard Bessemer and open-hearth rails, \$43; light rails, rolled from billets, 1.80c. to 1.90c., f.o.b. maker's mill.

Standard railroad spikes, 2.90c. to 3c. mill; track bolts with square nuts, 3.90c. to 4c. mill; steel tie plates, 2.35c., f.o.b. mill; angle bars, 2.75c. f.o.b. mill.

Jobbers quote standard spikes out of warehouse at 3.55c. base, and track bolts, 4.55c. base.

Wire Products.—The price situation is gradually clarifying. Wire nails are now generally available at \$2.75, Chicago district mills, and cement coated nails at \$2, while bright wire remains unchanged at \$2.65, district mill. Specifications from the jobbing trade are slightly improved, while those from manufacturing users are well maintained. Mill operations average 50 per cent of capacity.

We quote warehouse prices f.o.b. Chicago: No. 8 black annealed wire, \$3.05 per 100 lb.; common wire nails, \$3.15 per keg; cement coated nails, \$2.45.

Sheets.—Prices have again given way, black ranging from 3.30c. to 3.40c., base Western mill; galvanized from 4.35c. to 4.50c. and blue annealed from 2.40c. to 2.50c.

Chicago delivered prices from mill are 3.35c. to 3.45c. for No. 28 black, 2.45c. to 2.55c. for No. 10 blue annealed and 4.40c. to 4.55c. for No. 28 galvanized. Delivered prices at other Western points are equal to the freight from Gary plus the mill prices, which are 5c. per 100 lb. lower than the Chicago delivered prices.

Jobbers quote f.o.b. Chicago: 3.80c. base for blue annealed, 4.50c. base for black, and 5.50c. base for galvanized.

Rivets.—Prices are weak, particularly on large rivets, which are not quotable at above \$2.65 per 100 lb., Chicago.

Cold Finished Steel Bars.—Cold rolled steel bars and shafting have declined to 2.60c. per lb., Chicago, on carload orders and to 2.85c., Chicago, for less than carloads. Bookings are in encouraging volume, the bulk of them coming directly or indirectly from the automotive industry.

Billets.—A sale of 5000 to 6000 tons of rerolling billets in this market brought \$35, base Chicago.

Cast Iron Pipe.—Detroit has not yet taken action on the bids submitted May 29 on 14,000 tons. Springfield, Ill., has placed 150 tons of 6-in. with the Lynchburg Foundry Co. Dayton, Ohio, has awarded 400 tons to the United States Cast Iron Pipe & Foundry Co. Hamilton, Ohio, took bids yesterday on 950 tons of 16-in., 200 tons of 12-in. and 100 tons of 6-in. Flint, Mich., received figures last night on 500 tons of 6-in. and 250 tons of 8-in. Boonville, Ind., will take revised figures today on 1350 tons of 12 and 16-in.

We quote per net ton, f.o.b. Chicago, as follows: Water pipe, 4-in., \$51.70 to \$52.20; 6-in. and over, \$47.70 to \$48.20; Class A and gas pipe, \$4 extra.

Bolts and Nuts.—Specifications from the farm implement industry have decreased materially, indicating that the spring manufacturing season has been largely concluded. Demands from the automotive industry, however, are unabated. Sellers are proceeding with the closing of third quarter contracts. Discounts are unchanged and concessions are rather rare. Jobbers, in fact, are not particularly anxious to disturb the market, as they wish to protect their present stocks.

Jobbers quote structural rivets, 3.50c.; boiler rivets, 3.70c.; machine bolts up to $\frac{3}{4}$ x 4 in., 55 per cent off; larger sizes, 55 off; carriage bolts up to $\frac{3}{4}$ x 4 in., 50 off; larger sizes, 50 off; hot pressed nuts, squares, tapped or blank, \$3.50 off; hot pressed nuts, hexagons, tapped or blank, \$4 off; coach or lag screws, 60 per cent off.

Reinforcing Bars.—Activity in concrete bars is gathering momentum with lettings numerous and an unusually large amount of new work developing. Five separate projects for the South Park Commission, Chicago, will require a total of 1850 tons. Billet steel reinforcing bars are generally quoted at 2.60c., Chicago warehouse. Lettings include:

Baker office building, Minneapolis, 600 tons, to Concrete Steel Co.

Brummel Printing Co., plant addition, Milwaukee, Wis., 175 tons, to Concrete Engineering Co.

Krause Milling Co., plant addition, Milwaukee, Wis., 100 tons of rail steel, to Calumet Steel Co.

National Kindergarten College building, Wilmette, Ill., 150 tons of rail steel, to Calumet Steel Co.

Philips garage, Gary, Ind., 200 tons, to Concrete Steel Co. Hinckley & Schmitt, plant addition, Chicago, 155 tons of rail steel, to Calumet Steel Co.

Indiana highway work, 300 tons, to Olney J. Dean & Co. Illinois State highway work, 150 tons, to Olney J. Dean & Co.

Swift & Co., packing plant, Twin Falls, Idaho, 100 tons, to Olney J. Dean & Co.

Swift & Co., packing plant, Caldwell, Idaho, 100 tons, to Olney J. Dean & Co.

Hotel, Fifth and Sycamore Streets, Milwaukee, Wis., 150 tons, to American System of Reinforcing.

Lincoln and Irving office and bank building, Chicago, 200 tons, to Concrete Steel Co.

News-Sentinel Building, Fort Wayne, Ind., 100 tons of rail steel, to Inland Steel Co.

Maytag Co., Newton, Iowa, 325 tons of rail steel, to Olney J. Dean & Co.

Pending work includes:

Maytag Co., plant addition, Newton, Iowa, 400 tons.

South Park Commission, Chicago, addition to Grant Park stadium, 1000 tons; Oakwood Boulevard viaduct, 150 tons; Buckingham memorial fountain, Grant Park, 100 tons; Van Buren Street viaduct over Illinois Central tracks, 300 tons; Thirty-first Street viaduct over Illinois Central tracks, 200 tons.

North Park Hotel, Chicago, 500 tons, Walter W. Alschlager, architect.

Chicago Board of Education, Brennan grammar school, 150 tons; Lewis grammar school, 150 tons.

Reservoir, Quincy, Ill., 300 tons, general contract awarded to Priestner & Sons, Davenport, Iowa.

Commodore Apartments, 420 Barry Avenue, Chicago, 150 tons.

Continental Can Co., plant addition, Chicago, 150 tons.

American Can Co., warehouse, 1848 Clybourn Avenue, Chicago, 170 tons, general contract awarded to Turner Construction Co.

Resurrection school, 5038 West Jackson Boulevard, Chicago, 150 tons.

Waukegan Township High School gymnasium, Waukegan, Ill., 180 tons.

Guardian Angel school, Joliet, Ill., 100 tons.

Theater, stores and dance hall, Hammond, Ind., 200 tons, general contract awarded to Neslo, Wagstedt & Carlson, Chicago.

Old Material.—The trend of prices continues in the upward direction. Heavy melting, however, remains substantially unchanged, although it may be described as slightly stronger on the basis of a relatively small consumer purchase at \$16.65, delivered. Most dealers continue to bid up prices on railroad offerings, although a few important houses are now following a more conservative policy. Likewise users are showing more resistance as prices advance.

We quote delivery in consumers' yards, Chicago and vicinity, all freight and transfer charges paid, as follows:

Per Gross Ton	
Iron rails	\$17.50 to \$18.00
Cast iron car wheels	17.75 to 18.25
Relaying rails, 56 and 60 lb.	25.00 to 26.00
Relaying rails, 65 lb. and heavier	26.00 to 31.00
Forged steel car wheels	20.00 to 20.50
Railroad tires, charging box size	20.00 to 20.50
Railroad leaf springs, cut apart	20.00 to 20.50
Rails for rolling	18.50 to 19.00
Steel rails, less than 3 ft.	19.00 to 19.50
Heavy melting steel	16.00 to 16.50
Frogs, switches and guards cut apart	17.00 to 17.50
Shoveling steel	15.50 to 16.00
Drop forge flashings	11.50 to 12.00
Hydraulic compressed sheets	12.75 to 14.25
Axle turnings	12.50 to 14.00
Steel angle bars	18.00 to 18.50
Steel knuckles and couplers	19.50 to 20.00
Coil springs	20.50 to 21.00
Low phos. punchings	17.50 to 18.00
Machine shop turnings	9.00 to 9.50
Cast borings	11.00 to 11.50
Short shoveling turnings	11.00 to 11.50
Railroad malleable	18.50 to 19.00
Agricultural malleable	17.50 to 18.00
Per Net Ton	
Iron angle and splice bars	17.00 to 17.50
Iron arch bars and transoms	20.50 to 21.00
Iron car axles	27.50 to 29.00
Steel car axles	18.00 to 18.50
No. 1 busheling	12.50 to 13.00
No. 2 busheling	9.00 to 9.50
Pipes and flues	11.50 to 12.50
No. 1 railroad wrought	15.25 to 15.75
No. 2 railroad wrought	14.25 to 14.75
No. 1 machinery cast	17.50 to 18.00
No. 1 railroad cast	16.50 to 17.00
No. 1 agricultural cast	16.50 to 17.00
Locomotive tires, smooth	16.00 to 16.50
Stove plate	14.50 to 15.00
Grate bars	14.50 to 15.00
Brake shoes	14.50 to 15.00

New York

A Light Week in Pig Iron Sales, but Inquiry in Good Volume

NEW YORK, June 9.—The week has been more productive of inquiries for pig iron than of sales. Among the latter are 1000 tons for the A. P. Smith Mfg. Co., Bloomfield, N. J., delivery in the last four months of the year; 2000 tons for a company in the metropolitan district which is inquiring for 1000 tons more; 650 tons for June delivery to the Frankfort and Elkhart foundries of the New York Central. Inquiries include 1500 tons of malleable, last quarter delivery, for the New York Air Brake Co.'s Watertown, N. Y., plant; 2500 to 4000 tons, third and fourth quarter, for a company which buys in New York for several plants; 5000 tons for the last half; 2500 and 1500 tons of special iron for third quarter, also 1150 tons of various grades for the third quarter. In addition, several companies are negotiating for amounts ranging from 500 to 1000 tons. There is evidence of holding back in some quarters for the possibility of a lower price, though there are indications that concessions from the ordinary market have been the basis of some, at least, of the latest purchases. In the main the market has maintained fairly the range of prices of the previous two weeks, the surface indications making the basis around \$19, Buffalo, and \$20 to \$20.25, eastern Pennsylvania. Little has been done of late in Dutch iron, though German foundry iron has been offered at \$21.25, duty paid, for the equivalent of No. 2X. Indian iron is reported obtainable at \$20, duty paid.

We quote delivered in the New York district as follows, having added to furnace prices \$2.52 freight from eastern Pennsylvania, \$4.91 from Buffalo and \$5.44 from Virginia:

East. Pa. No. 2, sil. 1.75 to 2.25	\$22.52 to \$23.02
East. Pa. No. 1X fdy., sil. 2.75 to 3.25	23.02 to 23.52
East. Pa. No. 2X fdy., sil. 2.25 to 2.75	22.52 to 23.02
Buffalo, sil. 1.75 to 2.25	23.91 to 24.41
No. 2 Virginia, sil. 1.75 to 2.25	28.44

Ferroalloys.—Besides a fairly steady demand for carloads and small lots of ferromanganese there is an inquiry for 1000 tons from a company for shipment over the last half for its various plants. The spiegel-eisen market is a little more active with some fair sales reported. Prices for both alloys remain firm.

Cast Iron Pipe.—A fair volume of inquiry continues and prices are holding quite firmly to the quoted schedule. An outstanding municipal inquiry that may develop competition from sellers of foreign pipe is from the Department of Water Supply, Gas and Electricity, New York, calling for between 5000 and 6000 tons. A large inquiry from the South comes from Greenville, S. C., for 17,000 tons for a new water supply system. Demand for soil pipe is generally for small lots and prompt delivery. The market continues unsettled with northern sellers endeavoring to maintain discounts at a maximum of 47½ off on light and 57½ off on heavy pipe. One southern foundry is reported to have offered as high as 50¼ off on light and 60¼ off on heavy, but these higher discounts are apparently not being adopted by others.

We quote pressure pipe per net ton, f.o.b. New York, in carload lots, as follows: 6-in. and larger, \$50.60 to \$51.60; 4-in. and 5-in., \$55.60 to \$56.60; 3-in., \$65.60 to \$66.60, with \$5 additional for Class A and gas pipe. Discounts of both Northern and Southern makers of soil pipe, f.o.b. New York, are as follows: 6-in., 47½ per cent off list; heavy, 57½ per cent off list.

Finished Iron and Steel.—The torrid weather of last week undoubtedly slowed up steel business both as to orders and operations. On the whole, however, the situation continues very favorable as compared with that which existed prior to two or three weeks ago and mill representatives in New York are well satisfied with the volume of business that is coming to them. Here and there further weak spots have developed in the price structure, but at the same time a firmer tone has appeared in other quarters. Weakness has been pronounced in tin mill black plate, black and galvanized sheets and bright nails. Tin mill black plate is freely

quoted at 3.20c., Pittsburgh, with lower offers occasionally reported. Galvanized sheets have declined to 4.20c. and bright nails to 2.70c. In the heavier products, plates, shapes and bars, the tendency is toward a fair degree of firmness. The pipe situation has been one of the bright spots in the steel trade, both as to prices and volume of business, but the action of one mill in offering jobbers consigned stocks, a policy that has been in vogue for about a year, has created a disposition on the part of some other mills to offer price concessions to offset this form of competition. Fabricated steel prices are said to be slightly firmer, but notwithstanding the large volume of building work being let every week in New York and vicinity the scramble for business is still causing many fabricators to sacrifice a part of their profits.

We quote for mill shipments, New York delivery, as follows: Soft steel bars, 2.34c. to 2.44c.; plates, 2.24c. to 2.34c.; structural shapes, 2.24c. to 2.34c.

Warehouse Business.—Signs of improvement are seen as prices show a strengthening tendency and jobbers display growing confidence. Demand held well despite the intense heat which closed some shops part of the time. Out-of-town demand is particularly good. There are indications that jobbers' stocks are getting low. Revised figures show May sales close to April, to the surprise of many. One house is offering bars out of stock for export shipment at 2.80c. See page 1766 for prices. We quote boiler tubes per 100 ft. as follows:

Lapwelded steel tubes, 2-in., \$17.33; seamless steel, 2-in., \$20.24; charcoal iron, 2-in., \$25; 4-in., \$67.

Coke.—Interest in third quarter contracts is greater though prices are at the old levels. The Shenango Furnace Co. placed 17,000 tons monthly for the third quarter, the price said to be the same as on other recent bookings of furnace coke, or \$3. Two other sizable inquiries are pending. Spot furnace coke goes at \$2.85 to \$2.90. No authority has been found for quotations of \$3.50 on standard foundry coke, although low grades have appeared at that figure. The range is \$3.75 to \$4.25 on good foundry coke. Beehive output is slightly higher. By-product coke remains at \$10.41, Newark or Jersey City.

Old Material.—While there is a fair volume of purchasing by consumers of various grades of scrap, prices paid are not bringing out material in large enough volume to satisfy the brokers and as a result they are not inclined to commit themselves heavily at present prices. No. 1 heavy melting steel continues moderately active with \$15 to \$15.50 paid for delivery to eastern Pennsylvania consumers. Specification pipe is still strong with brokers paying up to \$16 per ton delivered. Cast borings have been advanced about 50c. per ton and machine shop turnings are stronger with brokers paying \$13 to \$13.50 per ton, delivered eastern Pennsylvania. Heavy breakable cast shows a slight upward trend in price and brokers are endeavoring to buy No. 1 machinery cast at \$15 per ton, New York, but have secured little tonnage as the local foundry market has registered a slight advance. Borings and turnings are still quiet.

Buying prices per gross ton New York follow:

Heavy melting steel, yard	\$10.00 to \$10.50
Heavy melting steel, railroad or equivalent	11.75 to 12.25
Rails for rolling	12.25 to 12.75
Relaying rails, nominal	21.00 to 22.00
Steel car axles	17.50 to 18.00
Iron car axles	22.50 to 23.00
No. 1 railroad wrought	13.00 to 13.50
Forge fire	10.25 to 10.75
No. 1 yard wrought, long	12.00 to 12.50
Cast borings (steel mill)	9.00 to 9.50
Cast borings (chemical)	13.00 to 13.50
Machine shop turnings	9.00 to 9.50
Mixed borings and turnings	8.50 to 9.00
Iron and steel pipe (1 in. diam., not under 2 ft. long)	11.75 to 12.25
Stove plate	10.00 to 11.00
Locomotive grate bars	10.50 to 11.00
Malleable cast (railroad)	13.00 to 14.00
Cast iron car wheels	13.00 to 13.50
No. 1 heavy breakable cast	12.25 to 12.75

Prices which dealers in New York and Brooklyn are quoting to local foundries per gross ton follow:

No. 1 machinery cast	\$16.00 to \$16.50
No. 1 heavy cast (columns, building material, etc.), cupola size	14.00 to 14.50
No. 2 cast (radiators, cast boilers, etc.)	13.00 to 13.50

Boston

Buying of Pig Iron Is in Small Lots—Scrap Market Firmer

BOSTON, June 9.—With possibly one exception, buying of pig iron in this territory was in small lots last week, and mostly of foreign stock. The exception was a lot of 2000 tons Alabama No. 2X and No. 1X to a Connecticut foundry for third quarter shipment. Most of the foreign iron selling is from India. A cargo to arrive tomorrow has been sold, as well as scattering lots in storage; consequently the market at the moment is quite bare of such iron. Prices obtained for India iron are on a delivered basis slightly under the Buffalo equivalent, or equal to it. Buffalo iron is inactive, but apparently pegged at \$19.50 furnace base. Western Pennsylvania iron carrying a Buffalo rate also is \$19.50 furnace base. There is hardly enough eastern Pennsylvania iron available to constitute a market, consequently prices are largely nominal. No change is noted in Virginia and Alabama iron quotations. Local importations of foreign iron for the past week were 1049 tons, consisting of 659 tons Dutch and 350 tons Indian. Importations for May were 3297 tons Indian, 101 tons German and 1781 tons Dutch, a total of 6179 tons, contrasted with 6167 tons in April, 11,365 tons in March, 13,701 tons in February, and 8212 tons in January. Aggregate importations for the five months were 45,624 tons.

We quote delivery prices on the basis of the latest sales as follows, having added \$3.65 freight from eastern Pennsylvania, \$4.91 from Buffalo, \$5.92 from Virginia and \$9.60 from Alabama:

East. Penn., sil. 1.75 to 2.25.....	\$24.65
East. Penn., sil. 2.25 to 2.75.....	25.15
Buffalo, sil. 1.75 to 2.25.....	24.91
Buffalo, sil. 2.25 to 2.75.....	25.40
Virginia, sil. 1.75 to 2.25.....	29.92
Virginia, sil. 2.25 to 2.75.....	30.42
Alabama, sil. 1.75 to 2.25.....	31.60
Alabama, sil. 2.25 to 2.75.....	32.10

Structural Steel.—The New England Structural Co. was the low bidder on the 350 tons structural steel required for the new Boston Elevated Railway car barn, this business being the largest available in several weeks. The fact that the aggregate tonnage of steel required for a dozen of the most active projects bid on last week did not exceed 1000 tons illustrates the character of passing business. Fabricators are competing actively even for small jobs. Mill prices on shapes are firm and unchanged.

Cast Iron Pipe.—Lynnfield, Mass., opened bids June 4 on approximately 18,000 ft. of 6-in., 8-in. and 10-in. pipe for its new water supply system. Award will be made this week. The Warren Foundry & Pipe Co. has taken 6000 ft. of 12-in. pipe from Onset, Mass. May pipe sales were not so large as usual, but indications are that business will be brisker this month and next, as several municipalities and private corporations are making up budgets with a view to calling for bids within this period. Prices on small pipe appear to have grown firmer again, but concessions are still being made on 16-in. pipe and larger. Prices quoted openly on domestic pipe are: 4-in., \$61.10 a ton delivered common Boston rate points; 6-in. and larger, \$66.10. The usual \$5 differential on Class A and gas pipe is asked.

Coke.—June starts off with both New England producers of by-product foundry coke quoting \$11.50 a ton delivered within New England, and with no increase in the consumption of such fuel. Coke producers take a rather pessimistic view of future business. The aggregate New England melt of iron does not increase appreciably from month to month. Where one foundry increases its melt, another reports a falling off. Of late increased melts have come in the smaller foundries, while decreases have come in the larger ones. Consumption of foundry coke therefore does not increase. If anything, it is falling off slightly. Ovens are making more prompt shipments than in several months.

Old Material.—The consensus of opinion of the old material trade is that it is easier to sell scrap than to buy it. Heavy melting steel and other material suitable for steel mill use is in larger demand than it has

been in months, but the market can hardly be termed active, because owners of material are holding out for still higher prices. Contrasted with a week ago, such material averages 50c. a ton higher. In this territory buyers and sellers show a preference for eastern Pennsylvania shipment, presumably because mills in that territory are less exacting in specifications. Going business is largely confined to heavy melting steel, pipe, machine shop turnings and mixed borings and turnings, although quite a little skeleton and forged scrap is moving. Materials for New England consumption are inactive.

The following prices are for gross ton lots delivered consuming points:

Textile cast	\$20.00 to \$20.50
No. 1 machinery cast.....	19.00 to 20.00
No. 2 machinery cast.....	16.00 to 17.00
Stove plates	13.00 to 13.50
Railroad malleable	19.00 to 20.00

The following prices are offered per gross ton lots, f.o.b. Boston rate shipping points:

No. 1 heavy melting steel.....	11.50 to 12.00
No. 1 railroad wrought.....	13.00 to 13.50
No. 1 yard wrought.....	12.00 to 12.50
Wrought pipe (1-in. in diam., over 2 ft. long).....	11.00 to 11.50
Machine shop turnings.....	8.00 to 8.50
Cast iron borings, chemical....	10.50 to 11.00
Cast iron borings, rolling mill....	8.50 to 9.00
Blast furnace borings and turnings	7.00 to 7.50
Forged scrap	9.50 to 10.00
Bundled skeleton, long.....	8.50 to 9.00
Bundled skeleton, short.....	9.00 to 9.50
Forged flashings	9.00 to 9.50
Shaftings	17.00 to 17.50
Street car axles.....	16.50 to 17.00
Rails for rerolling.....	12.00 to 12.50
Scrap rails	11.50 to 12.00

San Francisco

Structural Shapes Lead Quiet Market—Shipment of Belgian Steel Arrives

SAN FRANCISCO, June 6 (By Air Mail).—Conspicuous among the developments of the past week was the arrival of about 1750 tons of angles, rails, bars and channels from Antwerp. About 750 tons of this shipment was 60-lb. rails, sold before arrival to a California lumber company. There is a new inquiry in the market for 280 tons of either new or relay 70-lb. rails, and the Atlantic, Gulf & Pacific Co. is inquiring for 100 to 200 tons of 35-lb. rails, either new or relay for shipment to the Philippine Islands. San Diego, Cal., has placed 44 tons of 85-lb. tee-rails, 141 rail joints and 1000 standard tie plates with the United States Steel Products Co. The Caterpillar Tractor Co. has placed 175 tons of shapes and 125 tons of plates for its San Leandro, Cal., plant, with an Eastern mill.

Prices generally remain weak but unchanged. Some sellers profess to believe there are indications of price strengthening, but few buyers entertain the opinion. However, the only job pending large enough to develop a rock bottom price is the Mokelumne River pipe line, calling for 15,000 tons of plates. Bids will be received up to July 20 by the Board of Directors of the East Bay Municipal Utility District, Ray Building, Oakland, Cal.

Pig Iron.—A local malleable castings company has placed 150 tons of malleable iron with a local broker, and has still to place about 125 tons. A Los Angeles firm is inquiring for 900 tons of 3.25 to 3.75 per cent silicon Southern foundry iron. Aside from these two items, little of interest has developed. Prices are unchanged and current sales are small.

•Utah basic	\$27.25 to \$28.25
•Utah foundry, sil. 1.75 to 2.25....	27.50 to 28.50
••Scotch foundry	28.00 to 30.00
••English foundry	27.00 to 28.00
••Belgian foundry	24.00
••Dutch foundry	35.25 to 36.50
••Indian foundry	24.50
••German foundry	26.50
•Birmingham, Ala., foundry, sil. 2.75 to 3.25.....	29.00 to 30.00

•Delivered San Francisco.

••Duty paid, f.o.b. cars San Francisco.

Shapes.—Business placed during the week amounted to 6830 tons. Fresh inquiries call for 4230 tons. Prices are unchanged, 2.45c. c.i.f. Coast ports, with 2.40c. a possibility for desirable tonnages. The Ross Island Bridge, Portland, Ore., calling for 5125 tons, has been awarded to the American Bridge Co. through the

United States Steel Products Co. The Golden Gate Iron Works has taken a contract for two new buildings in the Philippine Islands which will require 895 tons. The same fabricator was awarded 110 tons for the Roosevelt Theater in Oakland, Cal. The Pacific Rolling Mill Co. is low bidder for 400 tons for the Tropp Apartments, San Francisco.

Plates.—Awards reported total 1177 tons. Only one inquiry of consequence was developed, 150 tons for the Spring Valley Water Co. pipe line. J. L. Smith has been awarded the general contract for one mile of 42-in. lock-bar pipe for Seattle, Wash., calling for about 500 tons. It is understood that the Willamette Iron & Steel Co. will fabricate the job, and that the steel will be furnished by the United States Steel Products Co. Llewellyn Iron Works took 302 tons for the Merced Irrigation District spillway gates. Because of certain difficulties it was, for a time, believed that the Dixon irrigation project at Woodland, Cal., calling for 150 tons, would not go through, but the Callahan Construction Co. Prices are unchanged, 2.40c. to 2.45c., c.i.f. Coast ports.

Bars.—About 150 tons of Belgian reinforcing bars, arrived during the week, have not yet been sold. Quotations of foreign bars, here, average about 2.10c., c.i.f., duty paid, although some quotations are slightly higher. A recent Belgian quotation in Portland, Ore., is reported at 2c., c.i.f., duty paid, in connection with a desirable tonnage. Eastern mills quote 2.50c., c.i.f. Coast ports, although a better price is probably possible for large tonnages. Local mills quote 2.55c. to 2.60c. base for soft steel bars. Jobbers' quotations for reinforcing bars out of stock are as follows: 3.25c. base for 250 tons, 3.35c. base, carload, and 3.80c. base, l.c.l. Among the larger lettings are the following:

Arroya de la Sacatela draining system, Los Angeles, Cal., 1854 tons, to unnamed firm through Atkinson & Spicer Co., general contractors.

Garage, Turk Street, San Francisco, Cal., 225 tons, to Gunn, Carle & Co.

South San Joaquin Irrigation District, Manteca, Cal., 216 tons, to unnamed jobber.

Warehouse Business.—Interest, although somewhat better than it was, is not sufficient to develop any large volume of business. There is, however, a tendency on the part of buyers to order more frequently. Prices are unchanged.

Merchant bars, \$3.30 base per 100 lb.; merchant bars, $\frac{3}{8}$ in. and under, rounds, squares and flats, \$3.80 base, per 100 lb.; soft steel bands, \$4.15 base, per 100 lb.; angles, $\frac{3}{8}$ in. and larger x $1\frac{1}{2}$ in. to $2\frac{1}{2}$ in., inc., \$3.30 base, per 100 lb.; channels and tees, $\frac{3}{8}$ in. to $2\frac{1}{2}$ in., inc., \$3.90 base, per 100 lb.; angles, beams and channels, 3 in. and larger, \$3.15 base, per 100 lb.; tees, 3 in. and larger, \$3.30 base, per 100 lb.; universal mill plates, $\frac{3}{4}$ in. and heavier, stock lengths, \$3.30 base, per 100 lb.; spring steel, $\frac{3}{4}$ in. and thicker, \$6.30 base, per 100 lb.; wire nails, \$4 base, per 100 lb.; cement coated nails, \$3 base, per 100 lb.; No. 10 blue annealed sheets, \$4.20 per 100 lb.; No. 28 galvanized sheets, \$6.25 per 100 lb.; No. 28 black sheets, \$5.25 per 100 lb.

Cast Iron Pipe.—Bids have closed on several jobs, but no awards have yet been made. The American Cast Iron Pipe Co. took 665 tons of 8-in. B for the United States Veterans' Bureau Hospital at Livermore, Cal., some little time ago, but not previously announced. Prices are unchanged, \$52 to \$53 base, in the San Francisco district.

Steel Pipe.—Los Angeles has placed 110 tons of $\frac{1}{2}$ -, $\frac{3}{4}$ -, 1-in. black pipe with an unannounced firm. Mesa, Ariz., has voted bonds for municipal improvements which call for 268 tons of Matheson joint pipe, and also 676 tons of cast iron pipe.

Coke.—Developments during the week were limited to small sales. Prices are unchanged, and there is apparently a fairly large tonnage of foreign coke available for immediate shipment.

English beehive, \$14.50 to \$17 at incoming dock, and English by-product, \$12.50 to \$14; Birmingham, Ala., by-product, \$19 to \$20 delivered; Wise County, Va., beehive, \$22 delivered.

Old Material.—Interest is somewhat more quiet, and prices, although unchanged, are not so firm as they were. Stocks in yard are fairly large. Heavy melting steel is still being quoted, both here and in Los Angeles, at \$11 to \$12 per gross ton, delivered to consumer's yard.

Birmingham

Steel Output Increased—Summer Operation for Cast Iron Pipe

BIRMINGHAM, June 8.—Reduction in quotations for pig iron has not started the buying movement but it is admitted that there has been some selling recently and that considerable business has been booked for delivery during the third quarter. The maximum quotation on No. 2 foundry, Birmingham, base, is \$21, while \$20 iron is heard of and larger consumers are asking concessions still. Many melters of iron are optimistic as to their trade conditions and in some instances there is every indication that steady operations will continue indefinitely and that shipment of product will be equal to the make. This is true as to the cast iron pressure pipe trade. A number of stove foundries and smaller melters have purchased in the Southern market in lots of 200 to 300 tons each. Several such orders have come here from the Middle West, in the Ohio River gateway territory. Negotiations have been reported for a large tonnage of iron. Furnace interests are somewhat more cheerful. Surplus stock of iron does not cause apprehension as yet. Some melters look for \$19 as base price shortly.

We quote per gross ton, f.o.b. Birmingham district furnaces, as follows:

No. 2 foundry, 1.75 to 2.25 sil.	\$20.00 to \$21.00
No. 1 foundry, 2.25 to 2.75 sil.	20.50
Basic	20.00
Charcoal, warm blast	30.00

Steel Operations.—The operation of the four new open-hearth furnaces in the new steel plant of the Tennessee Coal, Iron & Railroad Co. increases the Birmingham district steel output considerably. All Corporation plants are operating practically to capacity and with but little exception the various shapes of steel are being moved out as quickly as manufactured. The Gulf States Steel Co. is operating half of its open-hearth furnaces. In fabricated steel the numerous shops of the district have considerable work. The Ingalls Iron Works, the largest steel fabricating plant here, is turning out structural steel for the new soil pipe shop at Gadsden, besides other work. The Converse Steel Co., Chattanooga, is fabricating the steel for the new bar mill of the Gulf States Steel Co. at Gadsden. Other work is in hand and more is being estimated on. Steel bars, soft, Birmingham, are quoted 2.15c. to 2.25c.

Cast Iron Pipe.—Lettings for cast iron pipe are still good and are adding up to warrant reiteration of stating that there will be steady operation of plants through the summer, and probably for the remainder of the year. While Southern territory is taking some pressure pipe from plants in Birmingham, the greater quantity is being shipped to the Northwest and far West. Quotations are firm, according to authentic statement, around \$40 per ton, 6-in. and over, with shading being done about \$1 per ton. The keen competition in the soil pipe trade is still on and no price appears to be stable.

Coke.—Producers of coke are maintaining the \$5 per ton base, foundry coke, though a lower price is heard, independent producers looking after the commercial business. Furnace companies are operating by-product ovens to capacity and are using practically their output except what coke is desired for stock. Independent coke production is still steady, several hundred beehive ovens being in operation yet. The Tennessee Coal, Iron & Railroad Co. plans using conveyors from No. 8 coal mines to its by-product coke plant, eliminating handling of coal considerably. This will be the first service of the kind in the South.

Old Material.—Notwithstanding that improvement in the scrap iron and steel trade is heard of in other districts, there is no change in this territory. A little old material is moving all the time, quotations showing no advance and being down about as low as they have ever been. The larger consumers of scrap in this territory are not buying in a forward manner, satisfied with keeping up immediate needs. Heavy melting steel is as

weak as the other numbers in the list. Considerable railroad scrap is noticeable in yards of this territory.

We quote per gross ton, f.o.b. Birmingham district yards, as follows:

Cast iron borings, chemical.....	\$15.00 to \$16.00
Heavy melting steel.....	13.00 to 14.00
Railroad wrought.....	12.00 to 13.00
Steel axles.....	17.00 to 18.00
Iron axles.....	18.00 to 19.00
Steel rails.....	13.00 to 14.00
No. 1 cast.....	16.50 to 17.00
Tramcar wheels.....	16.50 to 17.00
Car wheels.....	15.00 to 16.00
Stove plate.....	13.00 to 14.00
Machine shop turnings.....	7.00 to 8.00
Cast iron borings.....	8.00 to 9.00
Rails for rolling.....	16.50 to 17.00

St. Louis

Improvement in Pig Iron Inquiry—Scrap Prices Higher

ST. LOUIS, June 9.—The largest sale of pig iron of the week was made by the St. Louis Coke & Iron Co.—2000 tons of foundry grades for prompt and third-quarter delivery—the largest of this being 500 tons to a Kansas melter for prompt delivery. Inquiries show considerable improvement, the principal ones being 5000 tons of basic iron for an upper Illinois melter and 2500 tons of malleable Bessemer for an east side melter, both for third quarter. A machinery manufacturer in the district is inquiring for 600 tons of foundry iron for last-half delivery. A Kansas melter wants several hundred tons of foundry iron and an Illinois machinery manufacturer is in the market for 600 tons of foundry. While Northern iron is quoted nominally at \$20.50, Chicago, sales have been made by makers as low as \$19 and one lot of 80 tons of resale iron was sold for \$17.50, Chicago. The Alabama iron ranges from \$18 to \$21, Birmingham, and some Tennessee iron is being brought in here on the basis of \$17.50, Birmingham.

We quote delivered consumers' yards, St. Louis, as follows, having added to furnace prices \$2.16 freight from Chicago, \$5.17 from Birmingham, all rail, and 81c. average switching charge from Granite City.

Northern fdy., sil. 1.75 to 2.25....	\$22.66
Northern malleable, sil. 1.75 to 2.25	22.66
Basic	22.66
Alabama fdy., sil. 1.75 to 2.25	\$23.17 to 26.17
(rail)	22.67
Tennessee fdy., sil. 1.75 to 2.25	21.31 to 21.81
Granite City iron, sil. 1.75 to 2.25	

Finished Iron and Steel.—The principal transaction of the week was a purchase of 335,000 tie plates by the Missouri-Kansas-Texas Railroad from the Scullin Steel Co. A Kansas City concern is in the market for 11 miles of 25 and 30-lb. rails for export and a St. Louis machinery manufacturer has asked for prices on 12 miles of 12-lb. rails for a sugar plantation. The Laclede Steel Co. got the order for 700 tons of reinforcing bars for the Senate Apartments, Union and Pershing Boulevards, St. Louis. The Missouri Highway Commission will award road contracts early in the week which will require 500 tons of reinforcing bars.

For stock out of warehouse we quote: Soft steel bars, 3.15c. per lb.; iron bars, 3.15c.; structural shapes, 3.25c.; tank plates, 3.45c.; No. 10 blue annealed sheets, 3.90c.; No. 28 black sheets, cold rolled, one pass, 4.80c.; galvanized sheets, No. 28, 5.80c.; blank corrugated sheets, 4.95c.; galvanized, 5.95c.; cold-rolled rounds, shafting and screw stock, 3.95c.; structural rivets, 3.65c.; boiler rivets, 3.85c.; tank rivets, $\frac{3}{4}$ in. diameter and smaller, 70 per cent off list; machine bolts, 55 per cent; carriage bolts, 50 per cent; lag screws, 60 per cent; hot pressed nuts, squares, \$3.50; hexagons, blank or tapped, \$4 off list.

Coke.—A slight increase in interest is being shown in both foundry and domestic grades of coke, the Granite City by-product ovens reporting shipments equal to production. The Granite City concern is quoting \$9 at ovens, while St. Louis interests are quoting \$11.

Old Material.—Further increases are reported in prices of old material during the week. While the market is stronger, it is almost entirely a dealers' market, as consumers are still buying sparingly. Dealers are competing for material in the hope of a general buying movement within the next 30 days. Advances range from 50c. to \$2 a ton. New railroad lists during

the week include the following: Pullman Co., St. Louis, 400 tons; Big 4, 2000 tons; Kansas City Southern, 300 tons; Missouri-Kansas-Texas, 2000 tons.

We quote dealers' prices f.o.b. consumers' works, St. Louis industrial district and dealers' yards, as follows:

Per Gross Ton	
Iron rails.....	\$14.00 to \$14.50
Rails for rolling.....	17.50 to 18.00
Steel rails less than 3 ft.....	18.00 to 18.50
Relaying rails, 60 lb. and under.....	24.00 to 25.00
Relaying rails, 70 lb. and over.....	30.00 to 30.50
Cast iron car wheels.....	17.00 to 17.50
Heavy melting steel.....	14.50 to 15.00
Heavy shoveling steel.....	14.50 to 15.00
Frogs, switches and guards cut apart.....	16.00 to 16.50
Railroad springs.....	18.00 to 18.50
Heavy axles and tire turnings.....	11.50 to 12.00
No. 1 locomotive tires.....	18.00 to 18.50

Per Net Ton	
Steel angle bars.....	15.00 to 15.50
Steel car axles.....	18.50 to 19.00
Iron car axles.....	24.00 to 24.50
Wrought iron bars and transoms.....	19.00 to 19.50
No. 1 railroad wrought.....	13.25 to 13.75
No. 2 railroad wrought.....	13.00 to 13.50
Cast iron borings.....	10.00 to 10.50
No. 1 busheling.....	11.50 to 12.00
No. 1 railroad cast.....	16.50 to 17.00
No. 1 machinery cast.....	17.50 to 18.00
Railroad malleable.....	13.75 to 14.25
Machine shop turnings.....	8.00 to 8.50
Champion bundled sheets.....	9.00 to 9.50

Buffalo

Material Going in Small Lots Only—Scrap More Active

BUFFALO, June 8.—The feature of inquiry for the past week was one lot of 3000 tons of foundry iron that a southern Pennsylvania melter asked bids on. It is not expected that the tonnage will be placed in this market. The remainder of the inquiry, which aggregated 5000 to 7500 tons, consisted of smaller lots. One local furnace interest has announced a base of \$19.50 for foundry and malleable, for third-quarter delivery, while it retains the \$19 base on second-quarter business. However, there is little more second-quarter business to be placed. The other furnaces are on \$19 for second and third quarter. One furnace reports total sales during the week of 5000 tons, none of the individual sales reaching 1000 tons.

We quote prices f.o.b. gross ton, Buffalo, as follows:

No. 2 plain, sil. 1.75 to 2.25.....	\$19.00
No. 2X foundry, sil. 2.25 to 2.75.....	\$19.00 to 19.50
No. 1 foundry, sil. 2.75 to 3.25.....	19.50 to 20.50
Malleable, sil. up to 2.25.....	19.00
Basic	18.50
Lake Superior charcoal.....	29.28

Finished Iron and Steel.—Inquiry for bars and shapes is not large. The going price is 2.265c.; one mill is trying to get 2.365c. Various sheet prices are being quoted, with demand not heavy. The leading interest is understood to have made a 3.15c. price on black to old customers and the going price is probably not more than 3.20c. On galvanized, 4.25c., Pittsburgh, probably could be developed. Pipe demand is better, with specifications more liberal following a slight dropping-off. Most of the call is for the butt-weld sizes. Bids are being taken on a 150-ton reinforcing bar job, a sewage disposal plant for the city of Lackawanna, N. Y. Contract for the third section of a Rochester, N. Y., subway, amounting to 110 tons, has been placed, as well as 300 tons of road-mesh for Cattaraugus County highways. An Erie, Pa., office building will require 1500 tons of structural steel.

Warehouse prices are being quoted as follows: Steel bars, 3.25c.; steel shapes, 3.35c.; steel plates, 3.35c.; No. 10 blue annealed sheets, 4.65c.; No. 28 black sheets, 4.75c.; No. 28 galvanized, 5.80c.; cold rolled shapes, 4.65c.; cold rolled rounds, 4.20c.; wire nails, 4.00c.; black wire, 4.05c.

Old Material.—Dealers are making a more active market and outwardly at least conditions are better. One consumer is in the market for stove plate and is paying \$15. Dealers with old orders are paying as high as \$16.50 for heavy melting steel. A large consumer is expected to enter the market shortly for heavy melting steel, hydraulic compressed and No. 1 busheling. This interest it is believed will have to pay \$16. One other local consumer may not be in the

market for scrap for some time, due to the fact that its open-hearth furnaces will be down, pending completion of certain plant improvements. Demand is better for borings and turnings; Cleveland market is strong and eastern Pennsylvania fairly strong. Specialties are at a standstill.

We quote prices f.o.b. gross ton, Buffalo, as follows:

Heavy melting steel.....	\$16.00 to \$16.50
Low phosphorus	18.50 to 19.50
No. 1 railroad wrought.....	14.00 to 14.50
Car wheels	15.00 to 16.00
Machine shop turnings.....	10.00 to 10.50
Cast iron borings.....	10.00 to 10.50
No. 1 busheling.....	15.50 to 16.00
Stove plate	15.00
Grate bars	12.50 to 13.00
Bundled sheets	11.50 to 12.00
Hydraulic compressed	14.50 to 15.50
No. 1 machinery cast.....	16.50 to 17.00
Railroad malleable	17.00 to 17.50
No. 1 cast scrap.....	16.50 to 17.00
Iron axles	26.00 to 27.00
Steel axles	17.00 to 17.50

Cincinnati

Fair Sales and Good Inquiries for Pig Iron —Better Steel Demand

CINCINNATI, June 9.—Pig iron sales have decreased in volume during the past week but inquiries continue to be brisk. No further price weakness has developed in Northern iron, the prevailing quotation being \$19, Ironton. A considerable tonnage of Tennessee iron has been sold at \$17, Birmingham, a reduction of 50c. from former quotations. Alabama furnaces have made no concessions from their price of \$20 to \$21, Birmingham. While the market is not stronger than it was a week ago, it has not declined to lower levels and dealers feel that the bottom has been reached. The outstanding sale is that of 1500 tons of Northern iron to a Dayton, Ohio, foundry. Other sales include: Machinist's foundry, Muncie, Ind., 500 tons to a Lake furnace; 300 tons of Northern foundry to the P. H. & F. M. Roots Co., Connersville, Ind.; 100 tons of Northern foundry to a central Ohio melter; 600 tons of Northern to a Cincinnati foundry and a like tonnage to the Favorite Stove & Range Co., Piqua, Ohio; 300 tons of Southern and 150 tons of Northern to the L. Schreiber & Sons Co., Cincinnati; and 300 tons of low phosphorus iron to a melter in the Birmingham district. The largest inquiry is from the Standard Sanitary Mfg. Co., Pittsburgh, for 3000 tons of Northern and probably 20,000 tons of Southern for its Louisville, Ky., plant. Other inquiries include: Columbia Sanitary Mfg. Co., Louisville, 11,000 tons of Southern iron; Hadfield-Penfield Co., Bucyrus, Ohio, 400 to 500 tons of low phosphorus iron; and 750 tons of Northern and 100 tons of malleable iron.

Based on freight rates of \$4.05 from Birmingham and \$2.27 from Ironton we quote f.o.b. Cincinnati:

Alabama fdy., sil. 1.75 to 2.25 (base)	\$24.05 to \$25.05
Alabama fdy., sil. 2.25 to 2.75	24.55 to 25.55
Tennessee fdy., sil. 1.75 to 2.25	21.05
Southern Ohio silvery, 8 per cent	28.77
Southern Ohio fdy., sil. 1.75 to 2.25	21.27
Southern Ohio, basic (nominal)	22.27
Southern Ohio, malleable	22.27

Fluorspar.—A local dealer sold 100 tons of fluorspar to a consumer in this territory during the past week; 85 and 5 per cent fluorspar is quoted here at \$17.

Reinforcing Bars.—Increased activity was recorded during the past week. The Pollak Steel Co. will supply 600 tons for the Belvedere Apartment Building, Cincinnati. The contract for two bridges at Dayton, Ohio, totaling about 290 tons, was awarded to the Bourne-Fuller Co. Pending projects are more numerous. Awards are yet to be made on seven bridges at Dayton which will require about 600 tons. The new home of the Cincinnati Enquirer is expected to require a fair tonnage of reinforcing bars. The Cleveland, Cincinnati, Chicago & St. Louis Railroad is to erect a warehouse at Dayton, but the bar tonnage is unknown at present. The price of new billets remains at 2c. to 2.10c., mill. Rail steel is quoted at 1.95c., mill, with large orders commanding a price of 1.90c.

Bars, Plates and Shapes.—A gradually increasing demand for bars has been noted in the past few weeks. Orders are limited mostly to small tonnages, but local sellers have been successful in booking a fair volume. The price continues to range from 2c. to 2.10c., Pittsburgh. Orders for plain shapes and plates are coming in better than during the corresponding period last month. Fabricators have been buying considerable material at 2c. to 2.10c., Pittsburgh. Inquiry among fabricators shows the majority of them fairly busy and the outlook is encouraging.

Wire Products.—The market has been spotty, with sellers complaining of the reduction of consumer buying to a minimum. Movement of nails and wire has been in small tonnages and there is little indication of increased buying in the near future. Some jobbers have considerable stocks on hand, and will not be in the market for at least 30 to 60 days, and possibly longer. Producers in this territory, despite the quietness of the market, are maintaining operations near capacity. Demand for nails is at a low point. Little buying has been done to test prices. Sellers are confident that attractive orders will bring out a quotation of 2.84c., delivered in Cincinnati, Pittsburgh mills thereby meeting their competitors' figures of 2.70c., Ironton. Plain wire can be secured for 2.45c., Ironton, but Eastern mills are refusing at present to go below 2.50c., Ironton, equivalent to 2.64c. delivered here.

Sheets.—No material change has occurred in the past week. Prices are still weak, with independent mills making concessions of \$2 to \$3 a ton to secure business. Black sheets are bringing 3.30c., Pittsburgh, although quotations as low as 3.15c. are reported. It is not believed that the latter price is representative of the local market. Quotations of 4.20c., Pittsburgh, on galvanized sheets have been made, but several large sellers are refusing to take orders at less than 4.30c. Blue annealed is quoted at 2.30c. to 2.40c., Pittsburgh. Demand for automobile sheets continues fairly good, with prices ranging from 4.25c. to 4.40c., Pittsburgh.

Cincinnati jobbers quote: Iron and steel bars, 3.30c.; reinforcing bars, 3.30c.; hoops, 4.35c.; bands, 3.95c.; shapes, 3.40c.; plates, 3.40c.; cold-rolled squares, 4.55c.; open-hearth spring steel, 4.75c. to 5.75c.; No. 10 blue annealed sheets, 3.90c.; No. 28 black sheets, 4.40c.; No. 28 galvanized sheets, 5.75c.; No. 9 annealed wire, \$3.05 per 100 lb.; common wire nails, \$3.15 per keg base; cement coated nails, \$2.65 per keg; chain, \$7.55 per 100 lb. base; large round head rivets, \$3.75 base; small rivets, 65 per cent off list. Boiler tubes, prices net per 100 ft., lap welded steel tubes, 2-in., \$18; 4-in., \$38; seamless, 2-in., \$19; 4-in., \$39.

Warehouse Business.—Several large jobbers state that their volume of business during June has shown a nice increase over the corresponding period in 1924.

Coke.—Dealers are now booking coke business for the last half, but sales have been quiet in the past week. Foundry grades continue to command a fairly active market, but furnace coke has been slow. Prices are unchanged.

Old Material.—Mills are buying a little scrap and the market is slightly stronger. Several railroads have lists out which close next week. However, activities are still below normal. Prices are showing more strength.

We quote dealers' buying prices, f.o.b. cars, Cincinnati:

Per Gross Ton	
Heavy melting steel.....	\$14.00 to \$14.50
Scrap rails for melting.....	14.00 to 14.50
Short rails	18.00 to 18.50
Relaying rails	28.00 to 28.50
Rails for rolling.....	15.50 to 16.00
Old car wheels.....	14.50 to 15.00
No. 1 locomotive tires.....	17.50 to 18.00
Railroad malleable	16.50 to 17.00
Agricultural malleable	15.50 to 16.00
Loose sheet clippings.....	10.50 to 11.00
Champion bundled sheets.....	12.50 to 13.00
Per Net Ton	
Cast iron borings.....	9.00 to 9.50
Machine shop turnings.....	8.00 to 8.50
No. 1 machinery cast.....	18.00 to 18.50
No. 1 railroad cast.....	16.00 to 16.50
Iron axles	22.50 to 23.00
No. 1 railroad wrought.....	11.50 to 12.00
Pipes and flues.....	9.00 to 10.00
No. 1 busheling.....	10.50 to 11.00
Mixed busheling	9.50 to 10.00
Burnt cast	10.00 to 10.50
Stove plate	10.50 to 11.00
Brake shoes	11.50 to 12.00

Cleveland

Steady Flow of Steel Business—Heavy Week in Pig Iron

CLEVELAND, June 9.—The volume of steel business shows little change. Mills are getting a fair number of orders, mostly for carloads but as a rule consumers are buying only for their early or June requirements, although some inquiry has come from agricultural implement manufacturers for steel for delivery early in the third quarter. A northern Ohio manufacturer of automobile springs has placed 1000 tons of carbon steel for springs and the Wheeling & Lake Erie Railroad has purchased an additional lot of 1000 tons of rails, this order going to a Pittsburgh district mill. Detroit automobile companies are placing some sheets, strip and alloy steel for July, although they are not making heavy commitments. The automobile industry is keeping up to about its May rate of production and some of the car builders now expect to operate at close to capacity through July. As there is usually a falling off in automobile production in June, the current month is expected to show an exceptionally good production record for the period. While there is weakness in several mill products, steel bars and structural material are holding firm at 2c., Pittsburgh, with some sales still being made at 2.10c. for small lots. Plates are fairly firm at 2c., although 1.90c. is appearing occasionally. The alloy steel market lacks strength but prices appear to be holding to the minimum quotation as given on page 1747. An increase in inquiry is reported in the structural field.

Pig Iron.—Sales continued heavy during the past week. Cleveland interests booked about 69,000 tons or slightly more than during the previous week. One Lake furnace further cut its price to \$18.50 from \$19 during the week for orders to points where competition was keen, but the market now shows a firmer tone and it is believed that the bottom has been reached. In the northern Ohio territory and Valley district \$18.50 is the commonly quoted price on foundry and malleable grades. There was considerable activity during the week in Indiana territory where one consumer bought 8000 tons of foundry and malleable grades and another 5000 tons. Sales in northern Ohio included a 2500 ton, 2000 ton and 1500 ton lot. Other sales included lots of 1500 and 1000 tons, but most of the business has been in smaller lots. The Westinghouse Electric & Mfg. Co.'s inquiry for 3400 tons for its Cleveland plant is still pending. That the buying movement is beginning to subside is indicated by falling off in inquiries, although one producer still has active inquiries for 15,000 tons outside of the pending inquiries of the Westinghouse company and the Standard Sanitary Mfg. Co. Ohio silvery and low phosphorus iron are quiet. Prices on the latter are easier.

Quotations below, except on basic and low phosphorus iron, are delivered Cleveland, and for local iron include a 50c. switching charge. Ohio silvery and Southern iron prices are based on a \$3.02 freight rate from Jackson and \$6 from Birmingham:

Basic, Valley furnace.....	\$18.25 to \$18.50
N'th'n No. 2 fdy., sil. 1.75 to 2.25..	20.00 to 20.50
Southern fdy., sil. 1.75 to 2.25....	24.50 to 26.01
Malleable	20.00 to 20.50
Ohio silvery, 8 per cent.....	29.02
Standard low phos., Valley furnace	28.00 to 28.50

Iron Ore.—There is virtually no activity in the ore market. Lake shipments during May amounted to 8,313,984 tons, an increase of 1,730,169 tons over May last year. Shipments to June 1 were 10,434,699 tons. The amount on Lake Erie docks June 1 was 4,522,184 tons, as compared with 4,890,946 tons on the same date a year ago. Receipts at Lake Erie ports during May were 5,376,418 tons and for the season until June 1, 6,274,835 tons as compared with 4,358,216 tons during the same period last year. Shipments from Lake Erie ports during May were 4,003,537 tons and for the season until June 1, 5,529,279 tons as compared with 4,684,162 tons for the same period last year.

Screw Stock.—Weakness that recently developed in screw stock has led to a definite price reduction of \$2 a ton, to 2.65c., Cleveland.

Bolts, Nuts and Rivets.—Bolt and nut specifications continue fairly heavy, particularly from the automotive industry. Prices are firm and some of the manufacturers will send out notices about June 15 to the effect that present discounts will prevail through the third quarter. The leading local rivet manufacturer is advising its trade that it will adhere to its present prices of 2.60c., Pittsburgh, and 2.75c., Chicago, for third quarter contracts. For Cleveland delivery the price will be 2.75c., Cleveland. The same manufacturer names 70 and 10 per cent off list, Pittsburgh, for small rivets and the same discount Cleveland for local delivery. While there is some price irregularity, business is still being taken on the 2.60c. basis.

Semi-Finished Steel.—Some of the mills are sounding out the market on sheet bar prices and are attempting to secure a \$33 price or a reduction of \$2 a ton. Sheet mills got little benefit from the last \$2 reduction, as sheets further declined after the cut in raw material. There is some activity in wire rods, which are firm at \$46, Cleveland.

Sheets.—New demand is rather light and mills are not filled up far ahead. The market continues weak. Lower prices have come out and the general price range is lower except possibly on blue annealed sheets, which will hold fairly steady at 2.30c. On galvanized sheets 4.10c., Pittsburgh, has appeared and 4.25c. has become a common quotation. On black sheets 3.10c. is being quoted and some business is reported placed at as low as 3c. Auto body sheets have further declined to 4.25c. which has become the generally accepted market price.

Old Material.—The market is very firm but prices have not advanced from last week's quotations. A Cleveland mill purchased 5000 tons of heavy melting steel from local dealers during the week at \$17.50, delivered, the buyer paying somewhat above the local market because of its specifications. Dealers are offering \$17 for scrap to fill this contract. Scrap sales by Michigan automobile companies last week brought slightly higher prices than during the previous week, one manufacturer selling borings at \$11.75 and turnings at \$11.50. A feature of the present market situation that is causing some comment is that while the production of scrap is rather large, there is apparently no surplus material although with present prices none is being absorbed in yard stocks. The firmness of the market is attributed to this condition. Considerable additional railroad scrap is being offered for this month. The Big Four Railroad is receiving bids today for 2000 tons including 900 tons of heavy melting steel and 600 tons of rails and the Nickel Plate Railroad for 750 tons of scrap. The Wheeling & Lake Erie Railroad will close June 11 on 1500 tons of cast iron car wheels and the Chesapeake & Ohio Railroad will take bids June 17 for 10,000 tons, including 2150 tons of car wheels.

We quote dealers' prices f.o.b. Cleveland per gross ton:

Heavy melting steel.....	\$16.25 to \$16.50
Rails for rolling.....	16.50 to 17.00
Rails under 3 ft.....	19.25 to 19.50
Low phosphorus melting.....	18.75 to 19.00
Cast iron borings.....	12.50 to 12.60
Machine shop turnings.....	12.25 to 12.50
Mixed borings and short turnings	12.50 to 12.60
Compressed sheet steel.....	14.00 to 14.25
Railroad wrought	12.75 to 12.25
Railroad malleable	18.00 to 18.25
Light bundled sheet stampings...	11.75 to 12.00
Steel axle turnings.....	15.00 to 15.50
No. 1 cast.....	17.75 to 18.00
No. 1 bushelling.....	13.25 to 12.50
Drop forge flashings.....	11.75 to 12.00
Railroad grate bars.....	13.25 to 12.50
Stove plate	13.25 to 12.50
Pipes and flues.....	9.25 to 9.75

Strip Steel.—Hot rolled strip steel is holding fairly well at 2.40c. for narrow strip, hoops and bands and at 2.20c. for wide strip, except for material that comes in competition with blue annealed sheets and light plates on which concession to 2.10c. are being made. On cold rolled strip a 3.50c., Cleveland, price has become fairly common with 3.65c. the maximum.

Reinforcing Bars.—Demand is fair but prices are very irregular. New inquiries include 400 tons for the American Insurance Building, Columbus, and 150 tons for a warehouse for Bloom, Rosenblum & Klein, Youngstown. Rail steel bars remain at 1.80c. to 1.90c.

Warehouse Business.—Another price reduction in warehouse prices on sheets is announced by a leading local jobber, effective June 10. The reduction is \$5 a ton on black sheets, \$2 on galvanized and \$1 on blue annealed.

Jobbers quote steel bars, 3.10c.; plates and structural shapes, 3.20c.; No. 28 black sheets, 3.90c.; No. 28 galvanized sheets, 5.10c.; No. 10 blue annealed sheets, 3.10c.; cold-rolled rounds, 4c.; flats, squares and hexagons, 4.50c.; hoops and bands, 3.85c.; No. 9 annealed wire, \$3.05 per 100 lb.; No. 9 galvanized wire, \$3.50 per 100 lb.; common wire nails, \$3.15 base per 100 lb.

Philadelphia

Fairly Substantial Sales of Pig Iron—Steel Demand Sustained—Scrap Prices Higher

PHILADELPHIA, June 9.—While there has been a fairly well sustained demand for finished steel in comparison with the volume of preceding weeks, the past week has brought more pronounced weakness in prices in several lines. Plates, sheets, cold finished steel and nails have shown definitely lower prices on some sales. Plates have been sold at 1.80c. and 1.85c., Pittsburgh, though most mills adhere firmly to 1.90c.; blue annealed sheets have declined to 2.30c. and 2.35c., Pittsburgh, with galvanized sheets as low as 4.20c. and black at 3.10c. to 3.15c.; nails have dropped to 2.70c., and there have been concessions on cold finished bars and shafting. In only one branch of the market is there an upward trend and that is in scrap, where the movement of prices, however, is moderate. Pig iron remains stationary notwithstanding fairly substantial sales.

Aside from evidences of price weakness the week has brought no developments of importance. Two of the features commonly commented upon are the sustained demand for structural shapes and the expansion of pig iron demand over the past few weeks.

Pig Iron.—Another week of fairly large sales of pig iron has brought no strength to prices, except that some furnaces are getting better order books and may not long be inclined to accept business at today's minimum of \$20, base. In fact, some furnaces are making no quotations less than \$20.50, base. The more important buying of the week, which included a purchase of 15,000 tons of foundry iron by a New Jersey cast iron pipe company, was at not above \$20, base, and some business is said to have figured closer to \$19.75, base, the concession being made to equalize freight rates. The cast iron pipe company's orders were given to three furnaces for equal quantities. A Trenton, N. J., radiator company bought 3000 tons of foundry on a \$20 furnace base and the same company is in the market for 1500 tons for its plant at Johnstown, Pa. The Pennsylvania Railroad is in the market for its usual quarterly requirements, 3000 to 5000 tons of foundry iron and high manganese basic. The Alan Wood Iron & Steel Co. will shortly blow out one furnace and blow in another, increasing its make about 100 tons a day.

The following quotations are, with the exception of those on low phosphorus iron, for delivery at Philadelphia and include freight rate varying from 76c. to \$1.63 per gross ton:

East. Pa. No. 2 plain, 1.75 to 2.25 sil.	\$20.76 to \$21.63
East. Pa. No. 2X, 2.25 to 2.75 sil.	21.26 to 22.13
East. Pa. No. 1X, 2.25 to 2.75 sil.	21.76 to 22.63
Virginia No. 2 plain, 1.75 to 2.25 sil.	28.67 to 29.17
Virginia No. 2X, 2.25 to 2.75 sil.	29.17 to 29.67
Basic delivery eastern Pa.	21.50 to 22.00
Gray forge	21.50 to 22.00
Malleable	22.00 to 22.50
Standard low phos. (f.o.b. furnace)	23.00 to 24.00
Copper bearing low phos. (f.o.b. furnace)	25.00 to 26.00

Ferroalloys.—Sales of ferromanganese are few. Both domestic producer and importers quote \$115, furnace or seaboard.

Billets.—The market is not being tested, but the nominal quotations are \$35 for rerolling quality and \$40 for forging quality.

Plates.—A fairly well sustained demand for plates is reported by most of the eastern mills. The market has remained firm for weeks at 1.90c., Pittsburgh, but sales have been made within the last few days at 1.80c. and 1.85c., though this is not a general quotation. It is only on the more desirable lots that the lower figure has been done, notably 300 tons of ½-in. sheared plates, tank quality. Some good orders have come from the southwestern oil fields. Operations continue at about the rate of recent weeks.

Structural Material.—A Scottish Rite Temple, requiring 2000 tons, and the University of Pennsylvania stadium, 1200 tons, are the major projects of the structural steel market, but there is a fairly good run of small jobs. In fact it is the aggregate of small work that is giving the mills a good operation. The price situation is no better, sales occasionally being made at less than 1.85c., Pittsburgh base, but the tendency of most of the mills is to discourage business offered at under 2c., Pittsburgh.

Bars.—Although some mills are anxious for steel bar orders the market remains fairly firm. Occasional reports of concessions from 2c., Pittsburgh, on concrete reinforcing steel are doubtless due to the competition of mills which produce bars from old material, as all makers of bars from new billet stock report that 2c., Pittsburgh, is their absolute minimum. Bar iron demand is extremely light, but makers maintain an unchanged price of 2.22c., Philadelphia.

Sheets.—Efforts to stabilize prices of sheets have come to naught and the situation is as bad as ever from the mill point of view. Buyers are also perturbed by the situation as prices have changed more rapidly than is expected even in a very weak market. Blue annealed sheets have been offered at 2.30c. and 2.35c., galvanized at 4.20c. and black at 3.10c. to 3.15c., Pittsburgh. Prices were considered by some mills to be unprofitably low when they were several dollars a ton above these figures. Demand is only fair.

Imports.—Iron ore came to Philadelphia last week from three countries, 6600 tons from Algeria, 7438 tons from Spain and 450 tons from Germany. Receipts of chrome ore were 5852 tons from Portuguese Africa and 550 tons from British South Africa. The only pig iron was from India, 1527 tons. One of the largest lots of structural steel received from abroad, 1211 tons, came from Belgium.

Old Material.—Consumer demand for scrap has not developed in sufficient proportion to give strong impetus to the upward movement of prices, and yet even a moderate demand has brought out higher figures on many grades. Steel scrap remains as quoted last week, \$15 to \$16, the higher figure being the most that any mill has paid and the lower figure representing the offers of brokers for delivery at Bethlehem, Pa. A large proportion of the scrap sold last week by the Pennsylvania Railroad went to the Pittsburgh district and prices paid were well above today's market.

We quote for delivery consuming points in this district as follows:

No. 1 heavy melting steel	\$15.00 to \$16.00
Scrap rails	15.00 to 16.00
Steel rails for rolling	17.00 to 17.50
No. 1 low phos. heavy 0.04 and under	20.00 to 21.00
Couplers and knuckles	19.00 to 20.00
Rolled steel wheels	19.00 to 20.00
Cast iron car wheels	17.00 to 17.50
No. 1 railroad wrought	18.00 to 19.00
No. 1 forge wrought	16.50 to 17.00
Bundled sheets (for steel works)	14.50 to 15.00
Mixed borings and turnings (for blast furnace use)	12.00 to 12.50
Machine shop turnings (for steel works use)	13.50
Machine shop turnings (for rolling mill use)	13.00
Heavy axle turnings (or equivalent)	14.00 to 15.00
Cast borings (for steel works and rolling mill)	13.50 to 14.00
Cast borings (for chemical plants)	15.50 to 16.00
No. 1 cast	17.50 to 18.00
Heavy breakable cast (for steel plants)	16.50 to 17.00
Railroad grate bars	13.50 to 14.00
Stove plate (for steel plant use)	13.50 to 14.00
Wrought iron and soft steel pipes and tubes (new specifications)	15.50 to 16.00
Shafting	22.00 to 23.00
Steel axles	23.00 to 24.00

SCRAP SPECIFICATIONS

Probable Effect of Proposed Classifications of Purchasing Agents' Association

IN the opinion of some members of the iron and steel scrap trade the proposed classification of iron rolling mill scrap of the National Association of Purchasing Agents, adopted at the Milwaukee convention May 25 to 28 and published in *THE IRON AGE* of June 4, page 1627, is a good thing for consumers, but may result in higher prices for those purchasers who insist upon the strict letter of the specifications. It is thought probable the National Association of Purchasing Agents will put into effect these specifications as well as those relating to scrap used in open-hearth furnaces, blast furnaces, electric furnaces, foundries, etc., which were framed last January at a meeting in Washington held under the auspices of the United States Bureau of Standards.

W. Vernon Phillips, Philadelphia scrap dealer, has given *THE IRON AGE* an opinion as to the ultimate effect upon the scrap trade and upon scrap prices of the more rigid specifications. Mr. Phillips is chairman of the board of the Perry, Buxton, Doane Co. and was chairman of the sub-committee on iron and steel scrap which operated as a part of the War Industries Board organization during the war.

"The scrap dealer," said Mr. Phillips, "has not objected to the specifications, as from the consumer's standpoint they are very good, and the buyer has the right to specify whatever he pleases when making a purchase. I doubt whether the scrap dealer is taking the specifications very seriously, as if taken as a whole they are practically impossible. The majority of the specifications are the same as those now in general use, and in many of the specialties the specifications tend toward clarification. The dealer is waiting to see whether the large consumers will adopt these classifications and specifications."

Not Enough No. 1 Scrap for All

"Probably 90 per cent of the scrap consumed is used in the open-hearth furnace, and so far as we can see the 90 per cent have not been represented in making up the pending specifications. If the large buyers should adopt these specifications, will they buy No. 2 and No. 3 grades? If they will, it would make it easier for the scrap dealer, but if a large portion of them insist on getting No. 1 scrap, they will have to pay a substantial premium, as obviously there is not enough of this grade to meet the needs of the entire trade."

"To produce No. 1 classification scrap means to limit the yard production to railroad and the small amount of similar unprepared steel available. As many of the mills make direct purchase of this unprepared scrap at within a narrow margin of prepared No. 1 steel, the dealer is forced to pay a price which necessitates holding the material for an advance of \$2 or \$3 a ton above the existing market. As the great bulk of the steel would naturally come under the 'B'

and 'C' specifications, it would mean that the dealer would prepare a second grade of steel and pick out for premium prices material meeting the No. 1 specification.

"But will the mills buy No. 2 grade at existing prices and pay a premium for No. 1? This is not at all likely, as they would prefer to continue buying on their present No. 1 specification, which gives them opportunity to accept second grade materials on a normal or rising market and protect themselves by rejecting material not coming up to their specifications on a falling market."

"In a word such specifications as are proposed can only be met when the demand is so light that the limited quantity can easily be supplied, provided the price is sufficiently above the cost of procuring and preparing, to enable the dealer to come out whole. When the demand is strong he can neither get sufficient tonnage of the high grade material nor slow down his yard operations sufficiently to assort, test and shear to the smaller sizes called for under these specifications."

Not Suited to Open-Hearth Plant

"Furthermore, the specifications as they have been drawn are not suitable to the average open-hearth plant. They can naturally use the No. 1 grade, but the great majority will also gladly use a substantial portion of the material specified in No. 2 and No. 3 as No. 1, while a great many of these same mills would not purchase No. 2 and No. 3 at all as specified. In other words, a structural mill does not require the same class of material that is needed in the manufacture of boiler plate, nor does a mill using 7-ft. charging boxes require material sheared to sizes suitable for 5-ft. boxes."

There has been some discussion in the scrap trade as to what the effect will be of the provision demanding alloy-free scrap. Mr. Phillips says that this provision is quite proper, from the consumer's standpoint, and is not new. "A rolling mill cannot use high carbon or alloy steel," he said, "and material coming under the proposed rolling mill classifications rarely contains these elements. But the provision that there shall be no high carbon or alloy-bearing metal in such scrap would make it necessary for every seller of scrap to protect himself. They specify that axle turnings shall be from 'wrought iron and soft steel railroad car axles' and shall not exceed 0.12 per cent carbon, yet it is common knowledge that railroad car axles usually run from 0.30 to 0.40 per cent. The same thing would apply to some extent to machine shop turnings."

"In the dealer's opinion the mills will continue to purchase what they need and their acceptance of material will be based largely upon the condition of the market. The dealer must sell what he has, and the mills will have to buy what they can get. While scrap is prepared in a yard, the dealer has no control over the manufacture of the steel and can only use his best judgment in trying to give the mills what he knows they can use to best advantage, and the mills will continue to buy from the dealers exhibiting the best knowledge of their needs, and these needs differ largely according to product, steel-making methods, etc."

Hot Weather Curtailed Mahoning Valley Production

YOUNGSTOWN, June 9.—Output is being curtailed somewhat on account of the hot weather. In the Mahoning Valley schedules this week call for the operation of 34 of 52 independent open-hearth furnaces, and 93 of 127 sheet mills. Tin plate capacity is scheduled at 80 per cent.

The Republic Iron & Steel Co. is operating five merchant bar mills, including its large 14 to 16-in. unit. The Sharon Steel Hoop Co. maintains a high rate of production in its finishing department.

The May payroll of \$6,604,996 is \$25,000 less than the April distribution. Wage disbursement the first five months of this year reached \$33,452,027 comparing with \$34,513,152 paid during the same period in 1924.

The Truscon Steel Co. has virtually completed negotiations for the purchase of important steel reinforcing business in northeastern Ohio, which is expected to increase its gross business about 20 per cent. A year ago the company acquired by purchase the steel joist department of the Central Steel Co. at Massillon, and moved the equipment to Youngstown.

The Sharon Steel Hoop Co., Sharon, Pa., planned to blow in during the week its Mary blast furnace at Lowellville, Ohio, following a period of suspension for relining and repairs. During the stack's inactivity, the company has been securing iron under a special arrangement with the Republic Iron & Steel Co., which blew in one of its furnaces in the Haselton group for this purpose. It is likely this Republic stack will now be suspended, with the Sharon company again producing its own iron.

FABRICATED STEEL

Awards Are More Than 21,000 Tons and Inquiries Total Close to 29,000 Tons

While awards of structural steel in the past week were somewhat lower than the records of the two preceding weeks, the volume of inquiries increased considerably. Last week's awards, as reported to THE IRON AGE, totaled 21,418 tons, while new work on which bids have been requested amounts to 28,738 tons, or more than the total of the two preceding weeks. Awards include:

Hammacher, Schlemmer & Co., New York, loft building at 145 East Fifty-seventh Street, New York, 800 tons, to Hay Foundry & Iron Works.
Hotel, Madison Avenue at Sixty-ninth Street, New York, 1200 tons, to George A. Just Co.
Apartment building, West End Avenue and Ninety-ninth Street, New York, 1200 tons, to Paterson Bridge Co.
Apartment building, West Eighty-second Street, New York, 400 tons, to Paterson Bridge Co.
Loft building, Thirty-ninth Street and Eighth Avenue, New York, 1200 tons, to Paterson Bridge Co.
Connecticut Mutual Life Insurance Co., Hartford, Conn., office building, 1200 tons, to Palmer Steel Co.
Bank, Miami, Fla., 400 tons, to an unnamed fabricator.
Mobile & Ohio Railroad, locomotive shops at Jackson, Tenn., 1600 tons, to McClintic-Marshall Co.
Bridge, Hastings, N. Y., 300 tons, to an unnamed fabricator.

Bank, Elizabeth, N. J., 200 tons, to Taylor-Fichter Steel Construction Co.

Garage, Ninety-fifth Street, near Broadway, New York, 500 tons, to Taylor-Fichter Steel Construction Co.

Garage, Pearl and Cliff Streets, New York, 600 tons, to Levering & Garrigues Co.

Apartment building, Fifth Avenue and Seventy-eighth Street, New York, 400 tons, to Levering & Garrigues Co.

Vacuum Oil Co., 57 oil storage tanks for Australia and New Zealand, 2500 tons, to Chicago Bridge & Iron Works.

Boston Elevated Railway, garage and heating plant at Malden, Mass., 213 tons and car barn at Roxbury, Boston, 350 tons, to New England Structural Co.

John Harris High School, Harrisburg, Pa., 550 tons, to Jones & Laughlin Steel Corporation.

Chicago & Western Indiana Railroad, crossings over Illinois Central Railroad and Cottage Grove Avenue, Chicago, 1950 tons, to McClintic-Marshall Co.

Northern Pacific Railway, ore dock extension, Allouez Bay, Superior, Wis., 1405 tons, to American Bridge Co.

Humble Oil Co., structure, Baytown, Tex., 550 tons, to Kansas City Structural Steel Co.

Ross Island Bridge, Portland, Ore., 5125 tons, to American Bridge Co.

Philippine Islands, two new buildings, 895 tons, to Golden Gate Iron Works.

Tropp Apartments, Laguna and Pacific Streets, San Francisco, 400 tons, Pacific Rolling Mill Co. low bidder.

Caterpillar Tractor Co., San Leandro, Cal., 300 tons, to an Eastern mill.

Merced Irrigation District, spillway gates, 302 tons, to Llewellyn Iron Works.

Seattle, Wash., one mile 42-in. lock bar pipe, 500 tons, to Willamette Iron & Steel Co., through J. L. Smith, general contractor.

Auburn Bridge, Auburn, Wash., 100 tons, to unnamed fabricator.

Structural Projects Pending

Inquiries for fabricated steel work include the following:

Manger Hotel, Seventh Avenue at Fiftieth Street, New York, 2000 tons.

Wadsworth Building, William and Cedar Streets, New York, 2000 tons.

Travelers Insurance Co., printing plant in Hartford, Conn., 1000 tons; Marc Eidlitz & Son, general contractors.

Office building, White Plains, N. Y., 250 tons.

New York City, another section of subway under Central Park West, 3500 tons; bids close June 12.

New York Central Railroad, bridge repairs, 400 tons.

Training and normal school, Bridgewater, Mass., 133 tons.

Silk mill, New Bedford, Mass., addition, 100 tons.

Edison Electric & Illuminating Co., Boston, garage, 125 tons.

Church, Worcester, Mass., 185 tons.

Maternity Hospital, Lynn, Mass., 100 tons.

Bridge, rebuilt, Massachusetts Avenue, Boston, 200 tons.

Bank building, Erie, Pa., 1500 tons.

Dayton, Ohio, Broadway bridge, 400 tons, E. Smith, Indianapolis, low bidder for general contract.

Aircraft Development Corporation, airship hangar, Detroit, 3000 tons.

Oakwood Boulevard Viaduct, Chicago, substructure, 730 tons, general contract awarded to Avery Brundage.

Shearer Building, Detroit, 400 tons.

Kresge Co., store, Chicago, 475 tons.

Steel frames for arches, Ford bridge, St. Paul, Minn., 1000 tons.

Transmission towers, New Zealand, 2000 tons.

Oil storage tanks, San Pedro, Cal., 1000 tons.

Refinery equipment, Baytown, Tex., 400 tons.

Bridge, San Juan, N. Mex., 300 tons.

Greater San Francisco Theater, San Francisco, 200 tons.

Telephone building addition, Spokane, Wash., 600 tons.

Irving Street Theater, San Francisco, 300 tons, bids in.

Warehouse, Panama Canal Zone, 130 tons.

Spring Valley Water Co. pipe line, San Francisco, 150 tons, bids in.

Scottish Rite Temple, Broad and Race Streets, Philadelphia, 2000 tons.

University of Pennsylvania, stadium at Franklin Field, Philadelphia, columns and trusses, 1200 tons.

Ohio Brass Co., Mansfield, Ohio, factory, 140 tons.

Buckeye Traction Ditcher Co., Findlay, Ohio, foundry addition, 100 tons.

Terminal Railroad Co., Toledo, Ohio, warehouse, 220 tons.

St. Luke's Hospital, Cleveland, 2500 tons.

RAILROAD EQUIPMENT

Inquiries for 2700 Steel Underframes the Most Important Car Business Pending

Aside from inquiries for 2700 steel underframes from three roads there is nothing of much importance pending in the railroad equipment field. Items of next importance are an inquiry for 25 locomotives from the Texas & Pacific, an order for 150 tank cars from the Shippers' Car Line and a contract for the repair of 300 freight cars.

The Department of Commerce announces that May shipments of railroad locomotives from the principal plants totaled 96 engines, as compared with 92 in April and 111 in May, 1924. Unfilled orders at the end of May totaled 353 locomotives for domestic use and 111 for export. Unfilled orders in May, 1924, totaled 643 and in May, 1923, 2150.

Freight cars in need of repair on May 15 totaled 193,035 or 8.3 per cent of the number on line, according to reports filed with the Car Service Division, American Railway Association. This was an increase of 3521 over the number reported on May 1. On May 15 Class 1 railroads had 11,389 locomotives in need of repair, a gain of 288 over the number in need of repair on May 1.

The Great Northern Railway Co. is in the market for 1000 steel underframes for freight cars.

The Fruit Growers Express, which recently ordered 500 steel underframes from the Pressed Steel Car Co., will shortly buy 700 additional.

The Buffalo, Rochester & Pittsburgh Railroad has given an order for the repair of 300 steel hopper cars to the Buffalo Steel Car Co.

The Southern Railway is in the market for 1000 steel underframes.

The Pennsylvania Railroad may take action this week on its inquiry for passenger cars.

The Mathieson Alkali Works has bought 10 tank cars from the American Car & Foundry Co.

The Ayrshire Coal Co. ordered 60 mine cars from the American Car & Foundry Co.

The Shippers' Car Line has ordered 150 50-ton, 10,000-gal. tank cars from the American Car & Foundry Co.

The Lehigh & Wyoming Valley Coal Co. has ordered 25 mine cars from the American Car & Foundry Co.

The Texas & Pacific is inquiring for 25 locomotives.

The St. Paul is expected to close Wednesday or Thursday on its inquiry for 1400 stock car repairs.

The Kansas City, Mexico & Orient has withdrawn its long pending inquiry for 250 freight cars.

The New York Central has placed 20 coaches with the Standard Steel Car Co.

The Baltimore & Ohio is expected to issue a large inquiry for passenger equipment.

The General Refrigerator Line may close against its inquiry for 1000 refrigerator cars within the next fortnight.

NON-FERROUS METALS

The Week's Prices

Cents Per Pound For Early Delivery							
	Copper, New York		Straits Tin (Spot)	Lead		Zinc	
	Lake	Electrolytic*	New York	New York	St. Louis	New York	St. Louis
June 3.....	13.62½	13.37½	54.87½	8.55	8.25	7.35	7.00
4.....	13.62½	13.37½	55.30	8.50	8.25	7.35	7.00
5.....	13.62½	13.37½	56.22½	8.50	8.25	7.40	7.05
6.....	13.62½	13.37½	.....	8.50	8.25	7.40	7.05
8.....	13.62½	13.37½	55.75	8.50	8.25	7.40	7.05
9.....	13.62½	13.25	55.37½	8.50	8.25	7.35	7.00

*Refinery quotation; delivered price ¼c. higher.

New York

NEW YORK, June 9.

Demand is light and quotations in most markets are a little lower. Buying of copper is less and prices have declined. Demand for tin is moderate but quotations are steady. The lead market is easier, while zinc continues firm and steady.

Copper.—After over a month of stable prices and fairly good buying, the electrolytic copper market has eased off. Today this grade can be bought at 13.50c., delivered, as against 13.62½c. which has prevailed for some weeks. Not all sellers will meet the lower price, but there are enough to satisfy the demand, which now is light. London prices have also declined in the last day or so after a period of considerable stability. Speculative selling is mentioned as one cause. The weakness there is having its effect here on both consumers and sellers. Nevertheless fairly good sales are being quietly and privately negotiated. Export demand has fallen off. Lake copper is quoted at 13.62½c., delivered.

Tin.—The Straits tin market is quiet with but little business transacted. Consumers are still out of the market, so that dealers constitute the principal traders. Total sales for the week have been about 500 tons. The feature of the market is that the metal is selling under import cost. Yesterday the market was practically stagnant and today the situation is not much improved. Spot Straits tin today is quoted at 55.37½c., New York. In London prices were about £3 per ton higher than a week ago, with spot standard quoted at £253 7s 6d, future standard at £254 10s and spot Straits at £256 17s 6d. The Singapore price yesterday was £256 10s. Arrivals thus far this month have been 2795 tons, with 5697 tons reported afloat.

Lead.—Conditions are not as chaotic as for several weeks past and buyers are not stampeding the market. Demand continues good and the general situation is more normal. There is no longer the wide spread in prices which prevailed a short time ago. The leading producer still quotes 8.40c., New York, as its contract price. The leading independent producer is selling at 8.25c., St. Louis, or 8.50c., New York, for early delivery, with June shipment at 8.30c., St. Louis. The latter fairly represents the outside market.

Zinc.—Buying of prime Western zinc is decidedly light and sellers report almost no business. Prices, however, remain remarkably steady, though largely nominal at 7c., St. Louis, or 7.35c., New York. There was a little export demand last week which strengthened the market temporarily but this has disappeared. Domestic consumers appear to be covered for the present.

Nickel.—Wholesale lots of shot and ingot nickel are quoted at 31c. to 32c. per lb., with electrolytic nickel at 38c.

Antimony.—The market is a little easier and Chinese metal for spot delivery is quoted at 16.50c. per lb., New York, duty paid.

Aluminum.—Virgin metal, 98 to 99 per cent pure, is quoted at 27c. to 28c. per lb., delivered.

Old Metals.—Business is spotty, most of the demand being for immediate delivery. Dealers' selling prices are as follows in cents per lb.:

Copper, heavy and crucible	13.00
Copper, heavy and wire	12.00
Copper, light and bottoms	10.75
Heavy machine composition	10.00
Brass, heavy	8.25
Brass, light	7.00
No. 1 red brass or composition turnings ..	9.00
No. 1 yellow rod brass turnings	9.00
Lead, heavy	7.90
Lead, tea	6.50
Zinc	4.50
Cast aluminum	19.00
Sheet aluminum	19.00

Chicago

JUNE 9.—Lead and zinc have advanced, while tin has declined. Demand for lead is in good volume, but the other metals are marking time. The used metals are unchanged. We quote, in carload lots: Lake copper, 13.87½c.; tin, 56c.; lead, 8.60c.; zinc, 7.15c.; in less than carload lots, antimony, 19c. On old metals we quote copper wire, crucible shapes and copper clips, 10.50c.; copper bottoms, 9.25c.; red brass, 8.25c.; yellow brass, 7.25c.; lead pipe, 7.25c.; zinc, 4c.; pewter, No. 1, 30c.; tin foil, 37c.; block tin, 42c.; all buying prices for less than carload lots.

Canadian Scrap Market Featureless— Steel Mills Active

TORONTO, ONT., June 9.—During the past two or three weeks practically nothing of interest has appeared in the iron and steel scrap market. Foundries throughout Ontario and Quebec have been operating only at about 50 per cent capacity, with an occasional one as high as 70 per cent. Local scrap dealers report a stagnant market and point out that in practically all cases consumers are buying in small tonnages for their immediate requirements. The large majority of foundries are carrying only scant supplies of scrap, but in spite of this none is showing interest in requirements beyond a week or two. The demand for machinery cast has been fairly steady. Stove plate, malleable scrap and car wheels are moving very slowly.

Mill activities, on the other hand, have been good since the first of March, and the works at Hamilton and Sault Ste. Marie, Ont., and at Sydney, N. S., have been running close to capacity since that time. The mills at Sault Ste. Marie and at Sydney are completing large rail orders. The Hamilton mills, however, are carrying large orders on their books of a diversified nature.

It is from the Hamilton district that the greater part of the current scrap demand comes, and dealers are receiving a small amount of new business, together with steady orders against old contracts for such materials as heavy melting steel, turnings, etc., from that quarter. The export demand for scrap, which showed some improvement a couple of months ago, has again fallen off. Prices have not been changed for some time and according to local dealers there is not sufficient business being done to warrant any further change in present quotations. Dealers' buying prices are as follows:

	Gross Tons	
	Toronto	Montreal
Steel turnings	\$9.50	\$9.00
Machine shop turnings	9.50	9.00
Wrought pipe	7.00	7.00
Rails	11.00	12.00
No. 1 wrought scrap	12.00	14.00
Heavy melting steel	11.00	11.00
Steel axles	17.00	18.00
Axles, wrought iron	19.00	20.00
Net Tons		
Standard car wheels	15.00	15.00
Malleable scrap	12.00	15.00
Stove plate	12.00	12.00
No. 1 machinery cast	17.00	16.00

Prices of Finished Iron and Steel Products (Carload Lots)

Tank Plates

F.o.b. Pittsburgh mill, base, per lb.....1.90c. to 2.00c.
F.o.b. Chicago, base, per lb.....2.20c.

Structural Shapes

F.o.b. Pittsburgh mills, base, per lb.....2c. to 2.10c.
F.o.b. Chicago, base, per lb.....2.20c.

Iron and Steel Bars

Soft steel bars f.o.b. P'gh mills, base, per lb.....2c. to 2.10c.
Soft steel bars f.o.b. Chicago, base, per lb.....2.10c.
Reinforcing steel bars f.o.b. P'gh mills, base, per lb.,
2.00c. to 2.10c.
Rail steel bars, f.o.b. Chicago district mills, base, per lb. 2.00c.
Common iron bars, f.o.b. Chicago, base, per lb.....2.00c.
Refined iron bars, f.o.b. P'gh mills, base, per lb.....3.00c.
Common iron bars, eastern Pa. mill, base, per lb.....2.10c.

Hot-Rolled Flats

Hoops, base, per lb., Pittsburgh.....2.40c.
Bands, base, per lb., Pittsburgh.....2.40c.
Strips, 6 in. and narrower, base, per lb., Pittsburgh.....2.40c.
Strips, 6 to 12-in., base, per lb., Pittsburgh.....2.20c.
Strips, 6 in. and narrower, Chicago.....2.50c.
Strips, wider than 6 in., Chicago.....2.40c.

Cold-Finished Steel

Screw stock and shafting, f.o.b. P'gh mills, base, per lb. 2.60c.
Screw stock and shafting, f.o.b. Chicago, base, per lb. 2.60c.
Screw stock, base, per lb., Cleveland.....2.65c.
Shafting, ground, f.o.b. mill, base, per lb.....3.00c.
Strips, f.o.b. P'gh mills, base, per lb.....3.50c. to 3.75c.
Strips, f.o.b. Cleveland mills, base, per lb.....3.50c. to 3.65c.
Strips, f.o.b. delivered Chicago, base, per lb. 3.80c. to 4.05c.
Strips, f.o.b. Worcester mills, base, per lb.....3.90c.

Wire Products

(To jobbers in car lots f.o.b. Pittsburgh and Cleveland)

Nails, base, per keg.....\$2.70 to \$2.75
Galvanized nails, 1-in. and longer, base plus.....2.00
Galvanized nails, shorter than 1 in., base plus.....2.25
Bright plain wire, base, No. 9 gage, per 100 lb.....2.50
Annealed fence wire, base, per 100 lb.....2.65
Spring wire, base, per 100 lb.....3.50
Galvanized wire, No. 9, base, per 100 lb.....3.10
Galvanized barbed, base, per 100 lb.....3.45
Galvanized staples, base, per keg.....3.45
Painted barbed wire, base, per 100 lb.....3.20
Polished staples, base, per keg.....3.20
Cement coated nails, base, per count keg.....2.00
*Bale ties, carloads, to jobbers....75, 15 and 5 per cent off list
*Bale ties, carloads, to retailers....75, 10 and 6 per cent off list
Woven wire fence, base, per net ton to retailers.....\$65.00
Chicago district mill prices are \$2 per ton above the foregoing and Chicago delivered prices are \$3 per ton above the prices f.o.b. Cleveland and Pittsburgh. Birmingham mill prices \$3 a ton higher; Worcester, Mass., mill \$3 a ton higher on production of that plant, and Duluth, Minn., mills \$2 a ton higher; Anderson, Ind., \$1 higher.

*F.o.b. Cleveland.

Sheets

Blue Annealed
(base) per lb.

Nos. 9 and 10, f.o.b. Pittsburgh.....2.30c. to 2.40c.
Nos. 9 and 10 (base) per lb., f.o.b. Chicago dist. mills,
2.40c. to 2.50c.

Box Annealed, One Pass Cold Rolled

No. 28 (base) per lb., f.o.b. Pittsburgh.....3.20c. to 3.30c.
No. 28 (base) per lb., f.o.b. Chicago dist. mill. 3.30c. to 3.40c.

Galvanized

No. 28 (base) per lb., f.o.b. Pittsburgh.....4.25c. to 4.35c.
No. 28 (base) per lb., f.o.b. Chicago dist. mill. 4.35c. to 4.50c.

Tin-Mill Black Plate

No. 28 (base) per lb., f.o.b. Pittsburgh.....3.15c. to 3.30c.
No. 28 (base) per lb., f.o.b. Chicago dist. mill. 3.25c. to 3.40c.

Automobile Body Sheets

No. 22 (base) per lb., f.o.b. Pittsburgh.....4.25c. to 4.30c.

Long Ternes

No. 28 (base) 8-lb. coating, per lb., f.o.b. mill. 4.60c. to 4.75c.

Tin Plate

Standard cokes, per base box, f.o.b. Pittsburgh district mills.....\$5.50
Standard cokes, per base box f.o.b. Chicago district mills 5.60
Standard cokes, per base box f.o.b. Elwood, Ind.....5.60

Terne Plate

(F.o.b. Morgantown or Pittsburgh)
(Per Package, 20 x 28 in.)

8-lb. coating, 100 lb. base.....\$11.20	20-lb. coating I. C.....\$15.50
8-lb. coating I. C.....11.50	25-lb. coating I. C.....17.00
15-lb. coating I. C.....14.35	30-lb. coating I. C.....18.35
	40-lb. coating I. C.....20.35

Rivets

Large, f.o.b. P'gh and Cleveland mills, base, per 100 lb.,
\$2.40 to \$2.60
Large, f.o.b. Chicago, base, per 100 lb.....2.65
Small, f.o.b. Pittsburgh.....70, 10, 5 per cent off list
Small, Cleveland.....70 and 10 to 70, 10 and 5 per cent off list
Small, Chicago.....70 and 10 per cent off list

Rails and Track Equipment (F.o.b.)

Rails, standard, per gross ton.....\$43.00
Rails, light, billet, base, per lb.....1.70c. to 1.75c.
Rails, light rail steel, base, per lb.....1.65c. to 1.70c.
Spikes, 1/2 in. and larger, base, per 100 lb.....\$2.80 to \$3.10
Spikes, 1/2 in. and smaller, base, per 100 lb.....3.00 to 3.35
Spikes, boat and barge, base, per 100 lb.....3.25
Track bolts, all sizes, base, per 100 lb.....3.90 to 4.25
Tie plates, per 100 lb.....2.35 to 2.40
Angle bars, base, per 100 lb.....2.75

Welded Pipe

(F.o.b. Pittsburgh district mills)

Butt Weld			Iron		
Inches	Steel Black	Galv.	Inches	Black	Galv.
1/4	45	19 1/2	1/4 to 1/2	+11	+39
1/2 to 3/4	51	25 1/2	1/2	22	2
1/2	56	42 1/2	3/4	28	11
3/4	60	48 1/2	1 to 1 1/2	30	13
1 to 3	62	50 1/2			
Lap Weld			Lap Weld, extra strong, plain ends		
2	55	43 1/2	2	23	7
2 1/2 to 6	59	47 1/2	2 1/2	26	11
7 and 8	56	43 1/2	3 to 6	28	13
9 and 10	54	41 1/2	7 to 12	26	11
11 and 12	53	40 1/2			
Butt Weld, extra strong, plain ends			Lap Weld, extra strong, plain ends		
1/4	41	24 1/2	2 to 3	61	50 1/2
1/4 to 1/2	47	30 1/2	1/4 to 1/2	+11	+54
1/2	53	42 1/2	1/2	21	7
3/4	58	47 1/2	3/4	28	12
1 to 1 1/2	60	49 1/2	1 to 1 1/2	30	14
Lap Weld, extra strong, plain ends			Lap Weld, extra strong, plain ends		
2	53	42 1/2	2	23	9
2 1/2 to 4	57	46 1/2	2 1/2 to 4	29	15
4 1/2 to 6	56	45 1/2	4 1/2 to 6	28	14
7 to 8	52	39 1/2	7 to 8	21	7
9 and 10	45	32 1/2	9 to 12	16	2
11 and 12	44	31 1/2			

To the large jobbing trade the above discounts on steel pipe are increased (on black) by one point, with supplementary discount of 5 per cent and (on galvanized) by 1 1/2 points, with supplementary discount of 5 per cent. On iron pipe, both black and galvanized, the preferentials to large jobbers are 1, 5 and 2 1/2 per cent beyond the above discount.

NOTE—The above discounts on steel pipe also apply at Lorain, Ohio. Chicago district mills have a base 2 points less. Chicago delivered base 2 1/2 points less. Freight is figured from Pittsburgh, Lorain, Ohio, and Chicago district mills, the billing being from the point having the lowest rate to destination.

Boiler Tubes

(F.o.b. Pittsburgh)

Lap Welded Steel		Charcoal Iron	
2 to 2 1/4 in.	27	1 1/4 in.	+18
2 1/4 to 2 3/4 in.	27	1 3/4 to 1 3/4 in.	+8
3 in.	40	2 to 2 1/4 in.	-2
3 1/4 to 3 3/4 in.	42 1/2	2 1/4 to 3 in.	-7
4 to 13 in.	46	3 1/4 to 4 1/2 in.	-9

Beyond the above discounts, 5 fives extra are given on lap welded steel tubes and 2 tens on charcoal iron tubes.

Standard Commercial Seamless Boiler Tubes Cold Drawn

1 in.	60	3 in.	45
1 1/4 and 1 1/2 in.	52	3 1/4 to 3 3/4 in.	47
1 3/4 in.	36	4 in.	50
2 and 2 1/4 in.	31	4 1/2, 5 and 6 in.	45
2 1/2 and 2 3/4 in.	39		

Hot-Rolled

2 and 2 1/4 in.	34	3 1/4 and 3 3/4 in.	50
2 1/2 and 2 3/4 in.	42	4 in.	53
3 in.	48	4 1/2, 5 and 6 in.	48

Less carloads, 4 points less. Add \$8 per net ton for more than four gages heavier than standard. No extra for lengths up to and including 24 ft. Sizes smaller than 1 in. and lighter than standard gage to be held at mechanical tube list and discount. Intermediate sizes and gages not listed take price of next larger outside diameter and heavier gage.

Seamless Mechanical Tubing

Carbon under 0.30 base.....85 to 87 per cent off list
Carbon 0.30 to 0.40 base.....83 to 85 per cent off list
Plus usual differentials and extra for cutting. Warehouse discounts range higher.

Seamless Locomotive and Superheater Tubes

Cents per Ft.		Cents per Ft.	
2-in. O.D. 12 gage....	14 1/4	2 1/4-in. O.D. 10 gage....	18
2-in. O.D. 11 gage....	15	3-in. O.D. 7 gage....	33
2-in. O.D. 10 gage....	16	1 1/2-in. O.D. 9 gage....	15
2 1/4-in. O.D. 12 gage....	16	5 1/2-in. O.D. 9 gage....	50
2 1/4-in. O.D. 11 gage....	17	5 1/2-in. O.D. 9 gage....	52

Prices of Iron and Steel Products and Raw Materials

Ores

Lake Superior Ores, Delivered Lower Lake Ports

Old range Bessemer, 51.50 per cent iron.....	\$4.55
Old range non-Bessemer, 51½ per cent iron.....	4.40
Mesaba Bessemer, 51.50 per cent iron.....	4.40
Mesaba non-Bessemer, 51.50 per cent iron.....	4.25
High phosphorus iron, 51.50 per cent.....	4.15

Foreign Ore, per Unit, c.i.f. Philadelphia or Baltimore

Iron ore, low phos., copper free, 55 to 58 per cent iron in dry Spanish or Algerian	9.50a. to 10c.
Iron ore, Swedish, average 66 per cent iron	9.50c.
Manganese ore, washed, 61 per cent manganese, from the Caucasus.....	45c.
Manganese ore, Brazilian or Indian, nominal	42c.
Tungsten ore, high grade, per unit, in 60 per cent concentrates.....	\$11.00 to \$11.50
Chrome ore, Indian basic, 48 per cent Cr ₂ O ₃ , crude, per ton, c.i.f., Atlantic seaboard...	20.00 to 24.00
Molybdenum ore, 85 per cent concentrates, per lb. of MoS ₃ , New York.....	65c. to 70c.

Coke and Coal

(Per Net Ton)

Furnace coke, f.o.b. Connellsville prompt.....	\$2.75 to \$2.85
Foundry coke, f.o.b. Connellsville prompt.....	3.75 to 4.25
Mine run steam coal, f.o.b. W. Pa. mines.....	1.50 to 2.00
Mine run coking coal, f.o.b. W. Pa. mines.....	1.50 to 1.75
Mine run gas coal, f.o.b. W. Pa. mines.....	2.00 to 2.25
Steam slack, f.o.b. W. Pa. mines.....	1.45 to 1.50
Gas slack, f.o.b. W. Pa. mines.....	1.50 to 1.60

Ferroalloys

Ferromanganese, domestic, 80 per cent, furnace, or seaboard, per ton.....	\$115.00
Ferromanganese, foreign, 80 per cent, f.o.b. Atlantic port, duty paid.....	\$110.00 to 115.00
Ferrosilicon, 50 per cent, delivered.....	\$82.50 to 85.00
Ferrosilicon, 75 per cent.....	145.00 to 147.50
Ferrotungsten, per lb. contained metal.....	1.00
Ferrochromium, 4 per cent carbon and up, 60 to 70 per cent Cr., per lb. contained Cr. delivered.....	11.50c.
Ferrovandium, per lb. contained vanadium	\$3.50 to \$4.00
Ferrocobaltititanium, 15 to 18 per cent, per net ton.....	200.00

Spiegeleisen, Bessemer Ferrosilicon and Silvery Iron

(Per gross ton furnace unless otherwise stated)

Spiegeleisen, domestic, 19 to 21 per cent.....	\$33.00
Spiegeleisen, domestic, 14 to 19 per cent.....	32.00
Ferrosilicon, Bessemer, 10 per cent, \$34.50 to \$35.50; 11 per cent, \$37 to \$38; 12 per cent, \$39.50 to \$40.50; electric furnace ferrosilicon, 10 per cent, \$38; furnace with an advance of \$1 per unit for material above 10 per cent.	
Silvery iron, 6 per cent, \$24; 7 per cent, \$24 to \$25; 8 per cent, \$25.50 to \$26.50; 9 per cent, \$27.50 to \$28.50; 10 per cent, \$29.50 to \$30.50; 11 per cent, \$32 to \$33; 12 per cent, \$34.50 to \$35.50.	

Fluxes and Refractories

Fluorspar, 85 per cent and over calcium fluoride, not over 5 per cent silica, both gravel and No. 2 lump, per net ton, f.o.b. Illinois and Kentucky mines.....	\$17.50 to \$18.00
Fluorspar, foreign, 85 per cent calcium fluoride, not over 5 per cent silica, c.i.f. Philadelphia, duty paid, per net ton.....	18.00
Fluorspar, No. 1 ground bulk, 95 to 98 per cent calcium fluoride, not over 2½ per cent silica, per net ton, f.o.b. Illinois and Kentucky mines.....	32.50

Per 1000 f.o.b. works:

Fire Clay	High Duty	Moderate Duty
Pennsylvania.....	\$43.00 to \$46.00	\$40.00 to \$43.00
Maryland.....	48.00 to 50.00	43.00 to 45.00
Ohio.....	43.00 to 46.00	40.00 to 43.00
Kentucky.....	43.00 to 45.00	40.00 to 43.00
Illinois.....	43.00 to 45.00	38.00 to 43.00
Missouri.....	45.00 to 48.00	6.50 to 7.50

Ground fire clay, per ton.....	6.50 to 7.50
Silica Brick:	
Pennsylvania.....	40.00
Chicago.....	49.00
Birmingham.....	54.00
Silica clay, per ton.....	8.00 to 9.00

Magnesite Brick:	
Standard size, per net ton (f.o.b. Baltimore and Chester, Pa.).....	65.00
Grain magnesite, per net ton (f.o.b. Baltimore and Chester, Pa.).....	40.00
Chrome Brick:	
Standard size, per net ton.....	48.00

Bolts and Nuts

(F.o.b. Pittsburgh, Cleveland, Birmingham and Chicago)

Machine bolts, small rolled threads..60 and 10 per cent off list	
Machine bolts, all sizes, cut threads.....	50, 10 and 10 per cent off list
Carriage bolts, smaller and shorter, rolled threads.....	50, 10 and 10 per cent off list
Carriage bolts, cut threads, all sizes.....	50 and 10 per cent off list
Eagle carriage bolts.....	65 and 10 per cent off list
Lag bolts.....	60, 10 and 10 per cent off list
Flow bolts, Nos. 1, 2 and 3 heads.....	50 and 10 per cent off list

Other style heads.....20 per cent extra
Machine bolts, c.p.c. and t. nuts, ½ x 4 in., 45, 10 and 5 per cent off list

Larger and longer sizes.....45, 10 and 5 per cent off list
Hot-pressed nuts, blank or tapped, square.....4c. off list
Hot-pressed nuts, blank or tapped, hexagons.....4.40c. off list
C.p.c. and t. square or hex nuts, blank or tapped.....4.10c. off list
Bolt ends with hot pressed nuts.....50, 10 and 10 per cent off list
Bolt ends with cold pressed nuts.....45, 10 and 5 per cent off list
Washers*.....6c. to 5.50c. off list

*F.o.b. Chicago and Pittsburgh.

The discount on machine, carriage and lag bolts is 5 per cent less than above for less than car lots. On hot pressed and cold punched nuts the discount is 25c. less per 100 lb. than quoted above for less than car lots.

(Quoted with freight allowed within zone limits)

Semi-finished hex. nuts:
½ in. and smaller, U. S. S.....30, 10 and 5 per cent off list
¾ in. and larger, U. S. S.....75, 10 and 5 per cent off list
Small sizes, S. A. E.....80, 10, 10 and 5 per cent off list
S. A. E., ½ in. and larger.....75, 10, 10 and 5 per cent off list
Stove bolts in packages.....80 and 5 per cent off list
Stove bolts in bulk.....80 and 5 and 2½ per cent off list
Tire bolts.....50, 10 and 5 per cent off list

Semi-Finished Castled and Slotted Nuts

(Prices delivered within specified territories)

(To jobbers and consumers in large quantities)

	Per 100 Net		Per 100 Net
	S. A. E. U. S. S.		S. A. E. U. S. S.
¼-in.....	\$0.44 \$0.44	¾-in.....	\$2.35 \$2.40
½-in.....	.515 .515	1-in.....	3.60 3.60
¾-in.....	.62 .66	1½-in.....	5.55 5.80
1-in.....	.79 .90	2-in.....	8.90 8.90
1½-in.....	1.01 1.05	2½-in.....	12.60 13.10
2-in.....	1.38 1.42	3-in.....	18.35 18.35
2½-in.....	1.70 1.73	3½-in.....	21.00 21.00

Larger sizes—Prices on application.

Cap and Set Screws

(Freight allowed within zone limits)

Milled cap screws.....	80, 10 and 5 per cent off list
Milled standard set screws, case hardened.....	80 and 10 per cent off list
Milled headless set screws, cut thread.....	80 and 10 to 80 per cent off list
Upset hex. head cap screws, U. S. S. thread.....	80, 10, 10 and 5 per cent off list
Upset hex. cap screws, S. A. E. thread.....	80, 10, 10 and 5 per cent off list
Upset set screws.....	80, 10 and 10 per cent off list
Milled studs.....	75 per cent off list

Semi-Finished Steel, f.o.b. Pittsburgh or Youngstown, per gross ton

Rolling billets, 4-in. and over.....	\$35.00
Forging billets, ordinary carbons.....	40.00
Forging billets, guaranteed analysis.....	45.00
Sheet bars.....	35.00
Slabs.....	35.00
*Wire rods, common soft, base, No. 5 to ½-in.....	44.00
Wire rods, common soft, coarser than ½-in.....	\$2.50 over base
Wire rods, screw stock.....	\$5.00 per ton over base
Wire rods, carbon 0.20 to 0.40.....	3.00 per ton over base
Wire rods, carbon 0.41 to 0.55.....	5.00 per ton over base
Wire rods, carbon 0.56 to 0.75.....	7.50 per ton over base
Wire rods, carbon over 0.75.....	10.00 per ton over base
Wire rods, acid.....	15.00 per ton over base
Skelp grooved, per lb.....	1.90c. to 2c.
Skelp, sheared, per lb.....	1.90c. to 2c.
Skelp, universal, per lb.....	1.90c. to 2c.

*Chicago mill base is \$48. Cleveland mill base, \$46.

Alloy Steel

(F.o.b. Pittsburgh or mill)

S. A. E.	Series	Bars
		100 lb.
2100* (¼% Nickel, 10 to 20 per cent Carbon).....		\$3.00 to \$3.25
2300 (3% Nickel).....		4.50 to 4.75
2500 (5% Nickel).....		6.00 to 6.25
3100 (Nickel Chromium).....		3.50 to 3.65
3200 (Nickel Chromium).....		3.50 to 3.65
3300 (Nickel Chromium).....		7.50 to 7.75
3400 (Nickel Chromium).....		6.50 to 6.75
5100 (Chromium Steel).....		3.50 to 3.65
5200* (Chromium Steel).....		7.50 to 8.00
6100 (Chromium Vanadium bars).....		4.25 to 4.50
6100 (Chromium Vanadium spring steel).....		4.00 to 4.25
9250 (Silicon Manganese spring steel).....		3.50
Carbon Vanadium (0.45 to 0.55 Carbon, 0.15 Vanadium).....		4.25 to 4.50
Nickel Chrome Vanadium (0.60 Nickel, 0.50 Chromium, 0.15 Vanadium).....		4.50
Chromium Molybdenum bars (0.80—1.10 Chromium, 0.25—0.40 Molybdenum).....		4.25
Chromium Molybdenum bars (0.50—0.70 Chromium, 0.15—0.25 Molybdenum).....		2.75
Chromium Molybdenum spring steel (1—1.33 Chromium, 0.30—0.50 Molybdenum).....		4.75 to 5.00

Above prices are for hot-rolled steel bars, forging quality. The ordinary differential for coal drawn bars is 1c. per lb. higher. For billets 4 x 4 to 10 x 10-in. the price for a gross ton is the net price for bars of the same analysis. For billets under 4 x 4-in. down to and including 2½-in. squares, the price is \$5 a gross ton above the 4 x 4 billet price.

*Not S. A. E. specifications, but numbered by manufacturers to conform to S. A. E. system.

PERSONAL

B. D. Quarrie, formerly general manager of the Otis Steel Co., has been elected vice-president and general manager of the Paper & Textile Machinery Co., Sandusky, Ohio. This company manufactures paper and textile machinery, suction pumps and other equipment and controls patents covering the centrifugal casting of ferrous and non-ferrous metals. Before his connection with the Otis Steel Co. Mr. Quarrie was superintendent of the Newburgh mills of the American Steel & Wire Co., Cleveland.



B. D. QUARRIE

Alfred F. Stengel, for nearly 17 years associated with the Buffalo office of Rogers, Brown & Co., has been elected vice-president of the firm of Waldo, Egbert & McClain, Inc., Buffalo, New York and Boston. He will make headquarters at the Buffalo office.

William A. Chryst, vice-president and director of the engineering division Deleo Light Co., Dayton, Ohio, has been elected president of the Engineers' Club of Dayton.

Albert Schulze, formerly vice-president, has been elected president of the V. N. Devou Supply Co., Cincinnati. George N. Devou has been elected vice-president. Albert Vincent and Ralph Bingham have been reelected treasurer and secretary respectively.

Louis R. Vautrot, who has been connected with the engineering and sales departments of the Cutler-Hammer Mfg. Co., Milwaukee, during the past 12 years, has joined the sales engineering force of the Milwaukee branch office at 530 Grand Avenue.

Charles Steinecke, Jr., until recently in the advertising department of the McGraw-Hill Co., is associated with Philip T. King, 50 Church Street, New York, dealer in used locomotive cranes. Mr. Steinecke was connected with the McGraw-Hill Co. for about 10 years in advertising and business promotion service.

James P. Groome has rejoined the sales force of Manning, Maxwell & Moore, Inc., at Chicago, after an association of about six months with another machinery merchant.

Harry Burrell, for 17 years identified with the Interstate Iron & Steel Co., Chicago, latterly in connection with sales in territory outside of Chicago, has been appointed railroad representative in Chicago, to succeed Thomas F. Howe, who recently resigned to go with another company.

Frank Parker, general manager Briggs & Turivas, Chicago, will deliver an address before the Chicago Foundrymen's Club, at the City Club, Chicago, Saturday evening June 13. His subject will be "Grades of Scrap Suitable for Use in the Foundry."

Robert B. Miller, for the past 6 years head foreman of the East Chicago (Ind.) Water Works Co., has been appointed superintendent. This corrects the statement in this column, May 28, that Mr. Miller was connected with the Bates Expanded Steel Truss Co.

Ward C. Smith has sold his holdings in the Smith & Woodbury Co., Portland, Ore., dealers in mill sup-

plies, and William Wheeler, several years with the Crane Co. has taken his interest in the company, which hereafter will be called the Woodbury & Wheeler Co.

Major George H. Norton, chief engineer of the Grade Crossing Commission, has been elected president of the Engineering Society of Buffalo. Other officers were: vice-president, George Brigham, district representative for the Portland Cement Association; secretary, Roswell Farnham, district sales engineer, Buffalo Forge Co.; treasurer, Bert A. Hansen, manager of the Buffalo district, Cutler Hammer Co.; executive secretary, John R. Owen, engineering society; Hotel Statler; Buffalo. Directors elected include: William J. Gamble, Jr., secretary-treasurer, Vulcan Steam Forge Co.; J. F. Guider, works manager, Pierce-Arrow Motor Car Co.; J. A. Johnson, works manager, Canadian Crocker-Wheeler Co.

Carl C. Brown has been appointed general sales agent at Birmingham, of the Gulf States Steel Co., and Charles E. Paddock, division sales agent located at Dallas, Tex.

Frederick J. Haynes continues as president of Dodge Brothers, Inc., under the new ownership, and A. T. Waterfall as vice-president. John A. Nichols, Jr., formerly general sales manager was advanced to vice-president in charge of sales, and A. Z. Mitchell, for many years factory manager, is now vice-president in charge of manufacturing. R. A. Vail, assistant production manager, becomes factory manager. In the executive's personnel are also: director of engineering, Russell Huff; chief engineer, Clarence Carson; director of purchases, R. H. Allen; production manager, Albert A. Andrich.

Clifford E. Pierce was elected president of the Massillon Steel Casting Co., Massillon, Ohio, at a meeting of directors, June 5. He succeeds E. H. Birney, who resigned because his connection with the Union Drawn Steel Co. has necessitated his removal to the headquarters of the company at Beaver Falls, Pa. Mr. Pierce, who is president of the Betz-Pierce Co., Cleveland, jobber of iron and steel, has been a member of the board of the Massillon company for three years and its vice-president two years. A. H. Anthony, who has been manager of the Massillon company, was elected vice-president and general manager.

L. R. Meisenhelter, whose appointment as chief of the machinery exhibits of the Sesquicentennial Exposition, Philadelphia, was mentioned in this column in last week's issue, began his career with the York Mfg. Co., York, Pa., his native city. Later he was chief engineer in the Harrisburg Engineering Co. The high spots of his career were covered in last week's announcement, which unfortunately carried a misspelling of his name. He lives in Overbrook, Philadelphia.



L. R. MEISENHELTER

York district manager of the tramrail division with northern New Jersey, southeastern New York and part of Connecticut included in his territory.

L. N. Reed, mechanical engineer, New York, New

Haven & Hartford Railroad, has resigned. W. L. Bean, his assistant, has been appointed to succeed him. Mr. Bean became associated with the road in 1916 as assistant to the president, E. J. Pearson. In 1917 he was made assistant general mechanical superintendent, and in 1923, assistant mechanical engineer.

Leo F. Caproni, who went from New York to Springfield, Mass., a year and a half ago to become sales engineer of the Palmer Steel Co., fabricator of steel buildings, has been promoted to contracting manager, having charge of all selling and estimating on structural steel, metal lumber, steel sash, reinforcing rods and miscellaneous building material of steel. Mr. Caproni is a graduate of Dartmouth College and before associating himself with the Palmer Steel Co., was connected with the Lally Column Co., Boston, Chicago and New York; National Bridge Works, New York; Bethlehem Steel Co. and Hay Foundry & Iron Works, New York.

Andrew B. Murray, president A. B. Murray Co., New York, has been elected vice-president of Glasgow Iron Co., Pottstown, Pa., succeeding Robert Shoemaker, Jr., who retires after many years of service in the company's interest.

L. A. Scheck has been appointed manager of the

Boston sales office, 902 Oliver Building, of the Webster Mfg. Co., engineer and founder, Chicago.

Henry F. Russell, formerly of the Lumen Bearing Co., has been appointed sales manager of the Sumet Corporation and Cored Bar Corporation, Buffalo, manufacturer of a wide range of cored and solid bars cast from Sumet bronze bearing metal.

Carl E. Buddenbaum, for many years connected with the iron and steel industry, has associated himself with the law firm of McKinley & Schmauch, Conway Building, Chicago. For a time he was purchasing agent for the Steel & Tube Co. of America and during the last six years he has been with Joseph T. Ryerson & Son, Inc., Chicago, first in connection with industrial engineering, later as assistant works buyer and more recently handled the sale of specialties. He was educated at Northwestern University and Chicago Law School.

Edwin Wollaeger was elected president; John Goetz, vice-president, chairman of the board of directors, and general manager; F. Wollaeger, Jr., treasurer, and Edward Leason, secretary, by directors of the Kempsmith Mfg. Co., Milwaukee, manufacturer of milling machines. The former official personnel was Paul E. Thomas, president and treasurer; John Goetz, vice-president, and F. Wollaeger, Jr., secretary.

OBITUARY

ANDREW WARD FOOTE, founder of the Foote-Burt Co., Cleveland, died June 3, age 60 years. He was born in Guilford, Conn., and had been a resident of Cleveland 38 years. He founded the Foote-Burt Co. in 1892 and was its president until 1919, when he disposed of his interest and retired because of poor health. For many years he took a very active part in the affairs of the National Metal Trades Association and for four years served as a member of the administrative council of the association. He was president of the Cleveland branch of the association for the past seven years, was a member of the American Society of Mechanical Engineers and of the Union, Mayfield, Country Club and Chagrin Valley Hunt Clubs of Cleveland.



A. W. FOOTE

THOMAS G. COX, treasurer Mason Machine Co., Taunton, Mass., maker of textile machinery, died at his home in Hyde Park, Boston, June 3. He was associated with the industry many years.

CHARLES ALBERT BUCKLEY, president Ames Sword Co., Chicopee, Mass., died at his home in that city June 3 after a short illness. He was active in civic affairs and held many city offices, including that of mayor. He was a native of Palmyra, N. Y., where he was born in 1854. Mr. Buckley was associated with the Chicopee firm 49 years.

GEORGE H. GLASS, in recent years with the ship fitting department, Fore River Works, Bethlehem Shipbuilding Corporation, Ltd., Quincy, Mass., died at his home in that city June 2. Early in life Mr. Glass was superintendent of one of New England's largest steam

fitting works. He was born in Woolworth, Me., 75 years ago.

WILLIAM S. SIMPSON, vice-president Mississippi Valley Structural Steel Co., St. Louis, died in that city on June 4 after an illness of several weeks. He was born in St. Louis 46 years ago and was educated in Washington University. His father, the late William Simpson, founded the Christopher & Simpson Steel & Iron Co., which was merged several years ago with the Decatur Bridge Co. into the Mississippi Valley Structural Steel Co. He is survived by his wife and four children.

BURT W. PEIRCE, for 20 years identified with Joseph T. Ryerson & Son, Inc., Chicago, and for the past 15 years connected with its sales department, died June 2 in a hospital at Grand Rapids, Mich., following an attack of appendicitis. For a number of years he represented the Ryerson company in Texas and latterly was a member of the Chicago sales department. He was 39 years old.

FREDERICK H. BULTMAN, president F. H. Bultman Co., Cleveland, which is engaged in machine work and building special machinery, died in Long Branch, Cal., June 6, age 87 years. He organized the Bultman company in 1893 but had not been active in its affairs for the past ten years.

H. M. LOURIE, president and founder Lourie Mfg. Co., Springfield, Ill., died May 14, aged 75 years.

FRANK L. LEACH, who was in the offices of Perin & Marshall, consulting engineers, New York, for about two and a half years, and who left New York in January, 1922, to go to India as assistant manager for the Agricultural Implements Co., Ltd., a subsidiary of the Tata Iron & Steel Co., located at Jamshedpur, India, died April 7, 1925, after four days' illness. He was 34 years old. The success of the plant in India, capable of producing about 5000 tons of hoes and picks annually, was very largely due to his efforts. The loss of Mr. Leach will be very keenly felt by his associates and friends at Jamshedpur.

ROBERT L. WALKER, chief of the order and schedule department of the Youngtown Sheet & Tube Co., in the Youngtown district for many years, died June 7, following an illness of several months. He was 54 years old.

VIRGINIA FURNACES

Explain Why Freight Rates Now in Force Should Be Reduced

WASHINGTON, June 9.—Asserting that the pig iron industry in Virginia has been destroyed by the railroad rate adjustment since 1915 and that production has fallen from 299,160 tons of iron in 1913 to 75,733 tons in 1924, operators in that State have filed a brief with the Interstate Commerce Commission under the so-called Hoch-Smith resolution, asking for a thorough investigation of the rate situation as it relates to their interests. The Hoch-Smith resolution was enacted at the recent session of Congress, calling for a general rate structure investigation. Replies to complaints are being received up to June 15, following which hearings will be held.

The brief of the Virginia blast furnace interests has been filed on behalf of the Virginia Iron, Coal & Coke Co., the Allegheny Ore & Iron Co., the Pulaski Iron Co., the Low Moor Iron Co. of Virginia and the Lavino Furnace Co.

Basis of Rates Radically Changed

Eleven out of 13 blast furnaces in Virginia, it is declared, are idle and the operators request that rates be given that confer the benefit of location on the lines of the Pocahontas region railroads and not under an Eastern grouping. It is asserted that the Virginia furnaces have suffered keenly from rate advances applied on the basis of Eastern grouping. The condition of the Virginia pig iron industry is attributed not only to rate advances, but also to blanket percentage increases and the zoning and grouping of rate territory. The Virginia furnaces, it is stated, were first given rates on the basis of being Southern furnaces and later were considered Eastern and increases made on that basis.

The Virginia furnaces, it is further pointed out, have not been accorded the advantages of location in either the Southern or Eastern group, "but are suffering under the disadvantage of both," and being on the border group of rate group territory, "have received the maximum penalties from both sides."

"The net result," it is stated, "of the various changes made in our rates has been to take our markets from us and deliver them to our competitors. Even territory once local to our furnaces is now highly competitive. * * * Eleven of our 13 furnaces with their dependent mines, coke ovens and quarries, are idle and several thousand men employed over a period of 25 years are out of employment. The natural resources of the State cannot be utilized and approximately \$25,000,000 invested in furnace properties has been made practically worthless."

Conditions Under Which Furnaces Were Located

It is stated that, when these furnaces were located in Virginia more than 30 years ago, it was recognized by both the carriers and the furnaces that long hauls would be required on raw materials to the furnaces and on the outbound iron. The carriers and the furnaces, it is declared, knew that "our ores were lean and would require a greater tonnage of raw materials per ton of iron than was necessary to furnaces more favorably located. It was accepted that no local market existed and that Virginia iron must be sold in distant markets and that all conditions surrounding the manufacturing of pig iron in Virginia were vastly different from those in any other pig iron producing district in the country. It was with the assurance of the carriers of continued recognition of this fact that furnaces were constructed. It was mutually understood that rates would be constructed on the basis of what the traffic would bear."

As long as the rates were maintained with the paramount idea of making them no more than the fair value of the service to the shipper, it is stated, both carriers and furnaces prospered.

"Your commission has held in numerous cases," the

brief continues, "that the value of the service to the shipper is the most important factor in the construction of rates, and has defined the value of the service to the shipper as being his ability to reach a market and make his commodity a subject of commerce."

Service to Shipper Latterly Subordinated

Explaining that the Virginia furnaces are located on the Norfolk & Western and the Chesapeake & Ohio railroads, these carriers are declared to be among the most prosperous in this country and recognized the different conditions surrounding the production and transportation of pig iron from Virginia, as compared with other districts, and made rates accordingly. The Virginia furnaces, it is pointed out, were neither Northern nor Southern furnaces in the estimation of these carriers.

During recent years, it is stated, in a justifiable attempt to rehabilitate the carriers' finances, more stress has been laid on the cost of the service to the carriers than the value of the service to the shipper. When the railroads were taken over by the Government, according to the brief, the conditions existing on the lines of Virginia carriers were recognized to the end that the Pocahontas region was established and transportation conditions were adjusted to meet the conditions found in that vicinity. With the enactment of the Transportation act, the brief continues, the commission, while recognizing the superior financial and operating conditions of the Pocahontas region, did not establish that region as a separate rate-making district, but included it in the Eastern district.

Shippers and receivers of freight in the Pocahontas region, it is declared, are required to pay freight charges higher than the actual needs of the carriers serving them.

"For more than 30 years prior to the war," the brief states, "and to the era of horizontal freight increases, pig iron in average tonnages of over 300,000 tons per year was delivered to the carriers from our furnaces, which, in addition to the large tonnages of ore, coal, coke and limestone and the accompanying supplies, yielded annually about 1,800,000 tons of revenue freight. At present this tonnage, as compared with 1913, has decreased nearly 80 per cent."

To Supply Forgings for Large Steamship

Orders for the shaft and turbine forgings for the steamship Malola now building at Cramp's for the Matson Navigation Co. under the designs and supervision of Gibbs Brothers, Inc., have been placed with the Bethlehem Steel Co. This steamship is described as the largest high-powered passenger vessel ever built in the United States. There are 21 shafts, weighing all told 26 tons. The turbine forgings are open hearth carbon steel annealed forgings of 70,000 to 80,000 lb. per sq. in. tensile strength, with an elastic limit of not less than 50 per cent of the tensile strength. These forgings consist of 52 pieces of an aggregate of over 30 tons.

High Production of Waste Material at Detroit

DETROIT, June 9.—Melt in the district fell off in the past week, due to the extreme heat. Production of waste material is high. Few sales have been reported.

The following prices are quoted on a gross ton basis f.o.b. producers' yards, excepting stove plate. No. 1 machinery cast and automobile cast, which are quoted on a net ton basis:

Heavy melting and shoveling steel	.....	\$13.00 to \$13.50
Borings and short turnings	.....	10.75 to 11.25
Long turnings	.....	10.00 to 10.50
No. 1 machinery cast	.....	15.00 to 16.00
Automobile cast	.....	22.00 to 23.00
Hydraulic compressed	.....	11.75 to 12.25
Stove plate	.....	14.50 to 15.50
No. 1 bushelling	.....	12.00 to 12.50
Sheet clippings	.....	8.75 to 9.25
Flashings	.....	10.50 to 11.00

Dullness Is Well-Nigh Universal

Curtailed Output in Europe Fails to Halt Price
Declines—British Doles
a Burden

(By Cablegram)

LONDON, ENGLAND, June 8.

PIG IRON is weak, on poor sales, and there appears little prospect for improvement. Consumers are covering only their bare necessities and stocks are growing. There has been no further Cleveland restriction, but the Cumberland ironmasters expect to blow out two furnaces shortly. Hematite is dull and easier.

Foreign ore is quiet. Bilbao Rubio is held nominally at 22s. (\$5.34) c.i.f. Tees.

Finished steel is dull. Ordinary export demand is very poor and plate rollers are competing keenly for the few orders about. Some departments, particularly in structural engineering, are moderately busy. Staffordshire marked bars have been reduced 10s. to £14 10s. (3.15c. per lb.).

Sheets and Tin Plate

Tin plate tone is improved, on a fair amount of buying, both for home and export. Many works which recently sold on a 19s. 9d. (\$4.80) basis IC, f.o.b., now are asking for more money and considerable sales have been effected at around 20s. (\$4.86) basis IC, f.o.b. The Welsh output now is around 80 per cent of capacity.

Galvanized sheets are quiet, with little important demand, but with makers adhering to the agreed minimum price for No. 24 gage corrugated bundles.

Some small sales of Japanese specification black sheets have been made at £15 (3.25c. per lb.) f.o.b. for 6 x 3 ft., 13s., 107 lb., but demand for all gages is still poor.

On the Continent of Europe

Continental markets are dull generally. Steel prices are little affected by the fresh depreciation of franc exchange, but pig iron is considerably weaker. Little

export demand is passing through traders here. Domestic consumers of semi-finished steel are inquiring, but are bidding well below the sellers' ideas. Merchants have sold sheet bars at £5 5s. (\$25.50).

In Belgium the threatened strike has been postponed until June 15. The Société Anonyme John Cockerrill, Seraing, has secured an order from Portugal for 3500 tons of rails.

In France 139 furnaces were blowing on May 1.

British Doles Subsidizing Imported Steel

LONDON, ENGLAND, May 28.—The iron and steel trades continue in a depressed state, with the exception of certain branches such as tin plates and galvanized sheets, in which a moderate amount of business has been passing. Generally speaking, however, the iron and steel trades are in a bad way. Pig iron producers have cut prices almost to the bone but, save for a few small domestic trade orders, this policy has not been successful; consumers continue to hold off and undoubtedly will do so until obliged to come in. Stocks of Cleveland foundry iron are not plentiful because the production has been curtailed considerably, but makers are unable to maintain prices, owing to poor demand. Foreign iron is again at a competitive level, but new buying of this commodity is not of importance. Hematite is dull, also, owing to the poor demand from the consuming industries, and only nine furnaces on the North-East Coast are now producing this grade of iron.

The semi-finished trade is entirely under the influence of Continental competition, the latter article being imported into this country at well below the British price. Continental sheet bars can be sent to South Wales at £5 15s. (\$27.95) c.i.f.; the lowest British price is £6 15s. (\$32.80) delivered. In spite of this difference, however, no great volume of buying has been done, though some of the tin plate mills have made some

British and Continental European prices per gross ton except where otherwise stated, f.o.b. makers works, with American equivalent figured at \$4.86 per £1, as follows:

Durham coke, del'd..	£1 2s.		\$5.34
Bilbao Rubio ore†	1 2		5.34
Cleveland No. 1 fdy..	3 19½		19.32
Cleveland No. 3 fdy..	3 14	to £3 14½s.	17.98 to \$18.10
Cleveland No. 4 fdy..	3 13½		17.86
Cleveland No. 4 forge	3 12½		17.62
Cleveland basic	3 15½		18.34
East Coast mixed...	4 0		19.44
East Coast hematite..	4 19	to 5 0	24.06 to 24.90
Ferromanganese	15 10		75.33
*Ferromanganese	15 5		74.11
Rails, 60 lb. and up..	8 10	to 9 0	41.31 to 43.74
Billets	6 10	to 7 5	31.59 to 35.23
Sheet and tin plate bars, Welsh	6 12½	to 7 0	32.20 to 34.02
Tin plates, base box..	1 0	to 1 0¼	4.86 to 4.92
			C. per Lb.
Ship plates	8 10	to 9 0	1.84 to 1.95
Boiler plates	12 10	to 13 0	2.71 to 2.82
Tees	8 10	to 9 0	1.84 to 1.95
Channels	7 15	to 8 5	1.68 to 1.79
Beams	9 0	to 8 0	1.63 to 1.73
Round bars, ¾ to 3 in.	9 0	to 9 10	1.95 to 2.06
Galv. sheets, 24 gage	16 10	to 16 12½	3.58 to 3.61
Black sheets, 24 gage	11 10		2.49
Black sheets, Japanese specifications	15 5		2.31
Steel hoops	10 15	and 12 10*	2.33 and 2.71*
Cold rolled steel strip, 20 gage	16 0		2.47

*Export price.

†Ex-ship, Tees, nominal.

Continental Prices, All F. O. B. Channel Ports

Foundry pig iron:(a)					
Belgium	£3 7½s.	to £3 8½s.	\$16.40	to \$16.44	
France	3 7½	to 3 8½	16.40	to 16.44	
Luxemburg	3 7½	to 3 8½	16.40	to 16.44	
Basic pig iron:(a)					
Belgium	3 7½	to 3 8½	16.40	to 16.44	
France	3 7½	to 3 8½	16.40	to 16.44	
Luxemburg	3 7½	to 3 8½	16.40	to 16.44	
Billets:					
Belgium	5 2½		24.90		
France	5 2½		24.90		
Merchant bars:					C. per Lb.
Belgium	5 12½		1.22		
Luxemburg	5 12½		1.22		
France	5 12½		1.22		
Joists (beams):					
Belgium	5 7½	to 5 10	1.17	to 1.19	
Luxemburg	5 7½	to 5 10	1.17	to 1.19	
France	5 7½	to 5 10	1.17	to 1.19	
Angles:					
Belgium	5 18½	to 6 0	1.23	to 1.30	
½-in. plates:					
Belgium	6 16	to 7 0	1.48	to 1.52	
Germany	6 16	to 7 0	1.48	to 1.52	
¾-in. ship plates:					
Luxemburg	6 16	to 7 0	1.48	to 1.52	
Belgium	6 16	to 7 0	1.48	to 1.52	

(a) Nominal.

purchases since the break-up of the Tin Plate Price Stabilization Scheme.

Finished iron and steel, as a whole, particularly the heavy material, is dull. The export demand is practically negligible, while the home demand is exceedingly limited.

Excessive Price Reductions

The increasingly serious position of the British steel industry was dwelt upon in the speechmaking at the luncheon of the National Federation of Iron and Steel Manufacture, when the chairman, A. O. Peech, pointed out that there have been reductions in prices almost without parallel in British industry under existing conditions. The average selling price of British iron and steel products is little more than 30 per cent above pre-war, while general commodities are 66 per cent above. But the demand is still insufficient to provide means of livelihood for those who would normally be engaged in the industry. That is due to the competition of Continental countries, where the standard of living is lower and where there are advantages ac-

cruing from falling exchanges. Idle workers must have cost the country not less than £7,000,000 for the year, which represents a subsidy on every ton of imported steel of approximately £2 18s. (\$14.10), which has ultimately to be found by some part of productive industry.

Sir Philip Cunliffe-Lister, president of the Board of Trade, said that the position of the British iron and steel industry undoubtedly is serious, whether output or imports and exports. At no period before in the whole history of the industry have imports of iron and steel reached such a high level as in the first four months of the present year. "I think we shall win through," continued Sir Philip, "but I hope that, both inside the industry and outside, people will approach present problems without prejudice, simply facing the facts of today in the light of the conditions of today. My colleagues and myself, in what we propose in the administration of the Safeguarding of Industries proposals, will act without fear or favor, without prejudice, doing simply what is right at this time and in the present abnormal circumstances."

"DUMPING" HITS GERMANS

Machinery Makers Object to Paying Higher Prices Than Exported Steel Brings

BERLIN, GERMANY, May 19.—Conditions in heavy iron and steel have undergone no change. The Raw Steel Syndicate announces an all-around 20 per cent reduction in output until the end of June. Semi-finished products, as heretofore, are exempted from the reduction. Rolling mills continue to have orders for a long time ahead.

Negotiations between the heavy iron industry and the consuming manufacturers have begun, in regard to fixing relative home and export prices. At present, with the exception of thin sheets, the heavy industry is exporting at prices materially below those which they charge at home. This system is likely to continue,

the alleged justification being widespread "exchange dumping" by France, Belgium and Luxemburg.

The finishing manufacturers object to the export of heavy German iron and steel at below domestic prices, on the ground that foreign engineering concerns thereby get a bounty, enabling them to compete with Germans. The negotiations now proceeding are on the basis of an agreement come to last winter, during the first stage of the Franco-German commercial treaty discussion.

Manufacturers are to get rebates, equaling the difference between home and export prices, on such material as they consume in production of finished goods for export, but no such rebate will be granted as regards materials used for production of goods sold at home. In effect, this arrangement will be a subsidy (which the home private consumer will pay in shape of high prices) to cheapen the production cost of finished export goods.

INCREASING DULLNESS

French Iron and Steel Market Active in Only a Few Items

PARIS, FRANCE, May 29.—The lack of business asserts itself more and more, inland as well as export, where however competitors, whether British or Belgian, Luxemburg or German, are in as bad a plight as ours.

Pig Iron.—Unvarying calm; a better demand is expected for June, as it has been weak this month and last, and because consumers certainly will have to supply themselves anew, the more so as it is known already that the inland price of 345 fr. (\$17.60) is to be maintained next month, for No. 3 PL. f.o.b. Antwerp, it is hoped that the rise in foreign currencies will bring with it a certain activity; unhappily, due to competition, prices remain low, about 330 to 335 fr. (Belgian currency), or \$16.43 to \$16.67. As regards hematite, business is far from buoyant, yet as the margin between phosphorus and hematite has been reduced considerably, it would be impolitic not to use that latter description, which shows some advantages. Among the less well-booked works, those who need to secure high tonnage, prices in the Center region have moved down from 430 fr. (\$21.93) to 420 fr. (\$21.42) and even 410 fr. (\$20.90), delivered, for larger quantities. In the South-West quotations have even gone as far as 385 to 395 fr. per ton (\$19.63 to \$20.15) at works.

Ferroalloys.—Ferromanganese production has begun again at the works. Great Britain asks £15 10s. (\$75.33), delivered, which represents 1465 fr., i. e., a rate very nearly the same as ours.

Semi-Finished Products.—Business is slightly better, both inland and export; it has been stated that

orders absorb the output normally. F.o.b. Antwerp, blooms are slightly weaker, at £4 18s. to £4 18s. 6d. (\$23.81 to \$23.93); billets and targets are pretty well sustained at last week's level, £5 3s. to £5 3s. 6d. (\$25 to \$25.12) for the first and £5 4s. to £5 5s. (\$25.27 to \$25.51) for the second.

Rolled Steels.—Dullness is increasing in the domestic market. Building is restricted. Happily, a number of works have been able to secure several good export orders for beams, which relieves the home market. It has been asserted that in most of the Paris stores it is extremely difficult to get beams of 120, 140 and 160 mm. (4½ in., 5½ in. and 6¼ in.). Inland prices remain unchanged; for the export markets they are easier at £5 7s. to £5 8s. (1.16c. to 1.17c. per lb.) for beams, and at £5 12s. to £5 14s. (1.21c. to 1.24c.) for bars.

Rails.—An order from the Colonial Ministry for 625 tons standard rails of 26 kg. (52 lb. per yard) has been secured by a Franco-Belgian firm, whose tender was the lowest at 509.70 fr. (\$26), f.o.b. Dunkirk; had the conditions of the ententes been applied, this price should have been 608 fr. (\$31). Three offers representing 600 tons of metallic sleepers, for permanent ways 1 m. broad, have been made, varying between 518 and 568 fr. (\$26.42 and \$28.97) per ton, delivered Dunkirk.

Sheets.—For heavy and medium sheets the entente rates are applied; outsiders sell at 0.50 fr. per 100 kg. below the entente basic prices. For light sheets it is difficult to place even small orders; bookings again are well filled and waits for deliveries are long. Export trade has broadened but competition has brought down the price for heavy sheets to the lowest level of the Lorraine works, i. e., £6 15s. to £6 16s. (1.46c. to 1.48c.) for sheets of 5 mm. (No. 6½ gage) and above.

AUTOMOBILES IN FRANCE

Situation of French Motor Car Industry with Relation to American Competition

PARIS, FRANCE, May 29.—The motorcar industry in France counts among the most active branches in the land, and the one important one, because capable of considerable development, if nothing turns up to impede its progress. Ford's intentions, as revealed to us recently, are of a nature to worry our big manufacturers, more particularly those who, like Citroën, bring out utilitarian, professional and cheap vehicles.

To manufacture outside his own country, Ford began by exporting spare parts, ready to be put together. Little by little he considered the possibility of creating works, not only for the putting together of those spare parts shipped from Detroit, but real plants, for the manufacture over here of such spare parts as would give him satisfaction as to quality and also as to cost price. And this is how the Ford Works of Manchester celebrated recently the coming out of its 250,000th vehicle, entirely equipped and set together by the English works. In Copenhagen, the Ford Works turn out 200 cars a day, i.e., about 60,000 per annum.

Lately it has been announced that the French Société Anonyme des Automobiles Ford, whose plan it is to manufacture in France all Ford cars of French type, has erected important works, north of the Seine; in fact, the Société has bought the former works of the "Oxylithe," at Gennevilliers. This new installation will permit the immediate output of around 300 cars and chassis daily and Ford allows that, with future development, it might bring the daily production to 500 vehicles. These works once finished, he could consider

the possibility of exporting Ford vehicles, chassis and spare parts. It is said that the completion of the new works is to be expected by July 1, and that at that date the merging of the works in Paris with those in Bordeaux will have been accomplished.

French Production and Consumption of Automobiles

In 1924 the French production amounted to 173,000 cars; this figure ranks us in the second place, next but far behind the United States. It is said that 65 per cent of the French output is sold on the spot. Our market has therefore absorbed 115,000 French cars, if the 1924 returns are considered as a basis. But to these figures one should add the imports of foreign cars of American source.

Basing on March and April, 1925, the monthly imports total 2200 chassis, of which 2000 at least come from the Detroit works. This represents 24,000 Ford cars coming normally into France annually, at present. The sale in France of French and American cars is, in consequence, approximately $115,000 + 24,000$, i.e., 140,000 cars per annum.

If the French Ford works were to dispose on the home market of its production of 90,000 cars, suppressing all imports and exports, what would remain to our other manufacturers, conditions remaining the same with regard to export?

Ford moreover states that his intention is to profit by French exchange, in order to export to the neighboring countries. Fortunately for us we have still our North African market and our colonies; but it is undeniable that we shall have to keep our weather eye open if we wish to keep our advance and it will be necessary that manufacturers of spare parts help our motor people, in the interest of the French motor industry.

GERMAN "MINOR TARIFF"

Hits American Machinery Industries—Not a Final Revision

BERLIN, GERMANY, May 19.—The draft of the new so-called "Minor Customs Tariff" was published today. It is a highly important measure, both for its immediate effects and for the light which it throws upon future trade policy. It alters 945 items in the present Buelow tariff (dating from 1902), either by increasing import duties or by imposing duties on goods hitherto duty free, and is of emphatic protectionist character. It concerns intimately the American metal finishing industries, because the heaviest of all duties, with the exception of a few luxury textiles, are imposed upon mechanical products which the United States, owing to its mass production and technical efficiency, can at present produce more cheaply than Germany.

This "minor tariff" is not an ultimate revision of the Buelow tariff. This revision will take probably a couple of years and, so far, has not passed the stage of re-classification of goods. Although some new commercial treaties or provisional agreements have been concluded since Jan. 10, when the republic was freed from the economic shackles of the Versailles Treaty, other important treaties, including that with France, are pending. As these treaties involve hard bargaining for concessions in individual duty rates, it is impossible to negotiate on the basis of an out-of-date tariff destined to be radically altered. The "minor tariff," though it does not comprise all duties, is intended to show Germany's intentions.

Another reason for haste is the impending abolition of all import prohibitions, as is required by the commercial treaty with Great Britain. These import prohibitions operate at present as the most effective kind of protection, because goods are admitted only under special license and in rationed quantities. Many of the prohibitions already have been withdrawn. But they exist still for certain kinds of textiles, automobiles, typewriters, cash registers, talking machines, cal-

culating machines and other important products. Before the last prohibitions are removed, declares the Government, duties must be sufficiently increased to operate protectively.

Machinery Tariff Reduction Affects Czech Market

Czechoslovakia is a promising field for the development of the sale of American machine tools, especially in view of the recent enactment of a reduced import duty on various machinery items. Commercial Attaché James F. Hodgson, Prague, advises the Department of Commerce. That country contains more than 85 per cent of the manufacturing industry of the former Austro-Hungarian Empire, a large share of which is engaged in metal working. To meet the demand for metal-working machinery, many types of machine tools must be imported—a fact taken into consideration during the proposal of the new tariff schedule. The principal imports of machinery have been from Germany. There is a real demand especially for American precision tools, which have proved to be of a high standard of efficiency not found in those produced in any other country.

French Exports to United States

PARIS, FRANCE, May 29.—Movement of metallurgical products to the United States during April and in the first four months of 1925 was as follows:

Pig Iron.—603 tons in April; 1343 in first four months.

Blooms, Billets and Bars, Etc.—460 tons in April; 1568 tons in first four months.

Rails.—894 tons in April; 2608 tons in first four months.

Iron Castings.—1166 tons in April; 4524 tons in first four months.

Tubes (of every description).—101 tons in first four months.

GERMAN EMIGRATION

Skilled Workers Leaving—Iron and Steel and Other Mechanical Trades

WASHINGTON, June 8.—Industrial leaders in Germany, according to reports received by the Department of Commerce from Berlin, are disturbed over the high percentage of skilled workmen leaving the country. They have drawn the attention of the Ministry of Labor to this movement and its dangerous effect. The highest percentages of emigrants in 1924 were found in the iron and steel industry, the electrical and fine mechanical trades. The total number of emigrants from Germany in 1924 was 60,000, of which 40 per cent were skilled workmen. This compares with 115,000 in 1923. A statement issued by the Department of Commerce says:

The reasons for such large emigration of skilled workmen from Germany are apparent. The considerably lower wages than are paid in most other industrialized countries, together with continued crises, inflation, slumps and unpromising outlook for the future, induce many workmen to migrate from Germany to the United States, Latin America and Asia. . . .

Undoubtedly the difficulties of obtaining the comparatively large capital required for emigration, obstacles placed in the way of emigrants by German authorities, and especially immigration-restriction measures in Great Britain and the United States, have kept the flow of emigrants from Germany to a lower level than otherwise would have been the case. . . .

Of course, lower wages in German industry (\$1.50 to \$2 a day) can be maintained by the employers for a considerable length of time, only provided there is a large number of unemployed always waiting at the factory gates for work. It is stated by a prominent manufacturing enterprise in Berlin that the number of skilled workmen, especially in the machine and electrical industries, is now reduced to the barest minimum necessary for turning out current orders.

In spite of this condition, it seems highly improbable that emigration of skilled workmen will in the near future drive up the wages paid in German machinery and other technical manufacturing enterprises. The treasury of most unions is too weak to withstand any long-continued strikes.

French Iron and Steel Production in April

PARIS, FRANCE, May 29.—On May 1, out of 220 blast furnaces, France had 139 in blast (three more than on April 1), 33 not in blast (as against 37) and 48 being constructed or in repair (as against 47).

Production of pig iron for April amounted to 686,130 tons (daily average around 22,900 tons) as against 688,871 tons in March (daily average more than 22,200 tons). In April the works put out 138,154 tons of foundry iron (138,903 in March) and 493,036 tons basic iron (491,878).

Steel production in April totaled 586,977 tons (daily mean around 19,600 tons) as against 607,071 tons in March (daily mean around 19,600 tons). In April the production of basic steel was 400,396 tons and of open-hearth steel 174,243 tons, as against respectively 410,592 tons and 181,469 tons in March.

French Steel Makers Need Trade Agreement with Germany

WASHINGTON, June 8.—In mapping out its reconstruction program France gave precedence to rebuilding of plants, which are now equipped throughout with modern machinery, according to Assistant Trade Commissioner D. S. Green, at Paris. The principal industries in the French customs area, which takes in the Saar Basin, include metallurgical works and coal mines. These have been restored to their pre-war capacity in most cases, and the use of more modern machinery permits an important cutting down on labor and other production costs.

Mr. Green said that, while the three Rhineland provinces represent only 3 per cent of the area of France, they are industrialized to a point which causes them to increase France's iron products several times over. As the Versailles treaty provision, that products of Alsace and Lorraine be admitted into Germany duty free, expired early this year, industries in those provinces are declared suffering from the failure of France and Germany to conclude a commercial treaty. The temporary arrangement now in effect is far from satisfactory.

Lake Iron Ore Shipments in May

Lake Superior iron ore shipments in May were 8,313,984 gross tons or 26.28 per cent larger than in May, 1924, when the total was 6,583,815 tons. This is an increase of 1,730,169 tons. In May, last year, there was a decrease of 1.32 per cent from May, 1923. The comparative shipments by ports for May, 1924 and 1925, and for the season were as follows in gross tons:

	May, 1924	May, 1925	To June 1—	
			1924	1925
Escanaba	530,722	837,406	629,064	1,126,229
Marquette	241,108	462,179	253,225	515,376
Ashland	858,854	949,731	930,882	1,185,020
Superior	2,008,772	2,174,879	2,232,836	2,709,061
Duluth	2,139,107	2,935,868	2,275,954	3,619,472
Two Harbors	805,252	953,921	921,241	1,279,541
Total	6,583,815	8,313,984	7,243,202	10,434,699
Increase		1,730,169		3,191,497

The increase to June 1, this year, is 44.06 per cent over the corresponding period a year ago. Duluth's percentage of the total this year is 34.68; it was 31.42 per cent last year.

Transferring Bureau of Mines to Department of Commerce

WASHINGTON, June 9.—Transfer of the Bureau of Mines from the Department of the Interior to the Department of Commerce, effective July 1, by an executive order issued on Thursday of last week by President Coolidge, will place all of the activities of the bureau, excepting the divisions engaged in coal, oil and other mineral leasing work, under the jurisdiction of Secretary of Commerce Hoover. About 1000 employees will be transferred through the change, which was recommended more than a year ago by Secretary of the Interior Work. This is the second bureau transferred from the Department of Interior to the Department of Commerce, the Patent Office having been transferred some time ago. The administration of the Bureau of Mines involves an annual appropriation of \$2,000,000. The bureau will continue to be housed in the Interior Department building until a new home is provided for the Department of Commerce.

In a statement issued by Secretary Work he said the change is one of the reorganization plans approved by the joint Congressional committee. The purpose is to create in the Department of Commerce a division of the Government scientific and economic research aiding industry. Some of the work of the Bureau of Mines and that of the Department of Commerce overlaps and under the transfer it will be completely coordinated. It is the purpose of Secretary Hoover to appoint a committee, probably consisting of five members, among them an engineer, an expert on mines, including a miner and others, to survey completely the work of the Bureau of Mines so as to adjust it to the work of the Department of Commerce.

It is also understood that this committee will make recommendations to Secretary Hoover concerning the appointment of a director of the bureau, made necessary by the recent resignation of Dr. H. Foster Bain. The actual appointment will be made by the President at the suggestion of the Secretary.

For the Ymuiden furnaces in Holland, two carloads of bronze cooling blocks, patented by J. P. Dovel, recently named a vice-president of the Sloss-Sheffield Steel & Iron Co., have been shipped by the Dixie Brass & Foundry Co., Birmingham.

NEW TRADE PUBLICATIONS

Electric Automatic Dumb-Waiters.—Kaestner & Hecht Co., 500 South Throop Street, Chicago. Bulletin No. 520 illustrating and describing engines and other equipment controlling K & H automatic dumb-waiters. Size, 8 pages, 8 x 10 in.

Guards.—Flohr Safety Appliance Mfg. Co., Buffalo. Folder of four pages which describes with illustrations guards for saws and jointers.

Electric Elevators.—Kaestner & Hecht Co., Harrison, Throop and Congress Streets, Chicago. Bulletin No. 500 giving specifications under which the company builds its gearless traction elevators; also giving description and detailed illustrations of three other types of elevators and their appurtenances. Several plates are shown of industrial and government buildings which use this equipment. Size, 32 pages, 8 x 10 in.

Electric Motors.—Century Electric Co., St. Louis. A 4-page bulletin giving illustrations and data concerning Century repulsion start induction single-phase motors.

Generating Sets.—Engberg's Electric & Mechanical Works, St. Joseph, Mich. Catalog No. 105 devoted to the Engberg direct connected generating sets.

Power Transmission Machinery.—Dodge Mfg. Corporation, Mishawaka, Ind. Elaborately illustrated book visualizing the engineering, foundry, and machine shop facilities of company available for the manufacture of special machinery and equipment. The booklet also shows a wide range of special equipment built by the company.

Conveying Machinery.—Conveyors Corporation of America, 326 West Madison Street, Chicago. An illustrated booklet of 16 pages and cover describing the ash and soot disposal equipment at the Milwaukee sewerage plant.

Bolts and Nuts.—Chicago Nut Mfg. Co., 2513 West Cullerton Street, Chicago. A catalog illustrating all products of this company, supplemented by many pages of data such as A.S.M.E. standard proportions for machine screws, table for machine screw dimensions, standard thread formulae of various organizations and similar information of important reference value. Catalog consists of 88 pages and cover with thumb index.

Electric Controls.—Electric Controller & Mfg. Co., 2700 East Seventy-ninth Street, Cleveland. Bulletin No. 1048, just off the press, describes a new push-button operated oil switch for starting squirrel cage motors and also single phase motors. This starting switch throws the motor across the line when the start button is pressed; it is arranged for no-voltage protection or no-voltage release as desired and provides overload and phase failure protection by means of expansion wire temperature relays. This starting switch has a maximum rating of 5 hp. 110 volts and 10 hp. 220-440-550 volts.

Machine Screws.—Progressive Mfg. Co., Torrington, Conn. A 32-page catalog giving all information needed by the user of machine screws and nuts, interchangeable bolts and nuts, sink bolts, bulb wires, float rods, threaded wires and related products.

Collar Oiling Bearings.—Hill Clutch, Machine & Foundry Co., Cleveland. Bulletin No. 112 calls attention to the patented "Cleveland type" collar oiling bearing. The principle of this bearing is that the positive oil feed and distributing system immediately starts a forced oil circulation and it is therefore claimed that a heavy unbroken oil film is maintained which lifts the shaft free from all metal contact. This bearing is supplied in all styles of rigid and ball and socket mountings.

Standardized Steel Buildings.—Truscon Steel Co., Youngstown. An illustrated booklet showing the various types of industrial buildings designed and erected by this company; also featuring Truscon joist and reinforcing steel for buildings of larger type; also steel poles for electric power transmission, and Truscon wire mesh, dowel contraction joints, curb bars and edge protectors for highway reinforcement work. Space is also devoted to illustrations of Truscon boxes and platforms and foundry flasks.

Screws, bolts, nuts and rivets.—Pheoll Mfg. Co., Chicago. Catalog of 97 pages, thumb indexed, giving

illustrations and data of complete line of machine screws, cap screws, machine screw nuts, threaded wires, washers, copper rivets and burrs and other similar products. The booklet has an addenda of statistical information of interest to all users of these products.

Wire Products.—C. O. Jelliff Mfg. Corporation, Southport, Conn. An illustrated catalog of 32 pages devoted to wire cloth, wire specialties, etc.

Welding Electrodes.—General Electric Co., Bridgeport, Conn. A 16-page pocket size booklet devoted to welding electrodes, giving all information that the user needs.

Rod-O-Graph.—Bridgeport Brass Co., Bridgeport, Conn. A second edition of the Bridgeport "Ledrite Rod-O-Graph," which is a chart providing a convenient way to figure the weight of a brass rod required to make 1000 screw machine parts to known dimensions. The first edition was quickly exhausted, but copies are again available.

Steel Buildings.—Stefco Steel Co., Michigan City, Ind. A booklet of 32 pages, illustrated and describing various types of buildings and sections of buildings designed by this company and ready for quick erection.

Electric Apparatus.—Alexander Milburn Co., Baltimore. Two booklets of pocket size: one illustrating and describing the Milburn light designed for the simplification of illumination required for outside construction at night, the other devoted to the Milburn welding and cutting apparatus and Milburn generators, and auxiliary equipment.

Planer Controllers.—Cutler Hammer Mfg. Co., Milwaukee. Booklet C-14, an 8-page bulletin on automatic control of planers direct-connected to motors. Points claimed for this principle are: Quick reversal, due to plugging; accuracy of control at all speeds on forward and return cuts; safety and convenience through accessible control stations; setting-up time reduced to a minimum; no belt losses or slippage.

Evaporative Tests.—Combustion Engineering Corporation, Broad Street, New York. Booklet of 24 pages devoted to a report on evaporative tests on a boiler in the River Rouge plant of the Ford Motor Co. Eleven tests were covered, five with pulverized coal, three with blast furnace gas and three with a mixture of the two fuels. The boiler tested, which has 26,470 sq. ft. of heating surface and 16,000 cu. ft. of combustion space, is one of the largest ever built. The tests covered ratings from 83 to 286 per cent.

Aluminum Castings.—The Permold Co., Cleveland. A three-page pamphlet, illustrated, describing some of the properties of various "permold" alloys.

Cement Tile Roofing.—Federal Cement Tile Co., 608 South Dearborn Street, Chicago. Four-page folder devoted to roofing for industrial plants. This consists mainly of pictures, with a number of diagrams showing the way the material is handled.

Air-Tight Doors.—The Conveyors Corporation of America, 326 West Madison Street, Chicago. Leaflet of four pages describing the American air-tight cast iron door, designed for use in ash pits, coke ovens, retorts, kilns, etc.

The Warner & Swasey Co., Cleveland, has published an 8-page bulletin entitled "Net Profits," which is being sent to executives in 13,000 manufacturing plants to impress upon them the importance of the "net profit statement" as related to the work done by machine tools.

Dividends on both classes of preferred stock of the Wheeling Steel Corporation have been reduced in the disbursement payable July 1. Holders of preferred A stock, a cumulative 8 per cent issue, will receive \$1.40 a share, and the dividend on preferred B stock, a cumulative 10 per cent stock, is \$1.75 a share. Both dividends are payable to stockholders of record June 12. The full quarterly dividend requirements at the regular rates, based on \$4,923,000 of preferred A stock and \$22,559,800 of preferred B stock outstanding would have amounted to \$662,665. The reduced dividends call for the disbursement of \$463,858, but set up a deferred charge. In the year ended Dec. 31, 1924, the company paid up back dividends on preferred A stock amounting to \$113,310 and on the preferred B stock of \$1,972,974, which with the payment of the full dividends for the year on these issues, made total dividend disbursements of \$4,733,122. As net profits for 1924 were only \$866,119, surplus was drawn upon to the extent of \$3,972,012.

Machinery Markets and News of the Works

RAILROAD ACTIVITY

Inquiries and Purchases by Carriers Create Better Machine Tool Market

Illinois Central's Purchases Total \$200,000 and List of the Mobile & Ohio Will Run About Same Amount

THE Illinois Central Railroad's purchases of machine tools, briefly referred to in last week's issue, were the feature of the machine tool market. Tools bought for this road's new shops at Markham, Chicago, will total in value about \$200,000 and more are to be ordered within the next few weeks. Bids have gone in on the list of the Mobile & Ohio Railroad for equipping its new locomotive repair shop at Jackson, Tenn., and the machine tool requirements will aggregate \$200,000 in value. The Rock Island Lines have ordered a number

of large tools. The Santa Fe will probably take action shortly on its pending list. The requirements of the Chicago, Burlington & Quincy are in the hands of the purchasing department, but action may be deferred. There has been buying by the Pennsylvania Railroad, Philadelphia Rapid Transit Co., Detroit, Toledo & Ironton and other roads.

Industrial buying shows signs of a little more life in some sections. At Chicago the International Harvester Co. has bought considerable equipment for its Milwaukee works. Other buyers are the Jones Gear Co., Chicago; Barber-Colman Co., Rockford, Ill., and the Maytag Co., Newton, Iowa. The Nash Motors Co., Kenosha, Wis., has also bought additional equipment.

In the Detroit automobile field there is a slight quickening of activity so far as buying is concerned. Inquiries are pending from the Ford, Packard, Hudson, Chevrolet and Hupp motor companies. The Ford Motor Co. has ordered a number of special machines from the Morris Machine Tool Co.

New York

NEW YORK, June 9.

RAILROAD business is the outstanding development in the machine-tool trade, and in fact there is very little of anything else. Some Eastern machine tool companies are figuring on the large requirements of the Mobile & Ohio Railroad, whose purchases will total about \$200,000 if all of the machines on its list are bought. An Eastern company has shared to a considerable extent in purchases of the Chicago, Rock Island & Pacific Railroad, having received orders for an axle lathe, a 44-in. side-head boring mill, a 46-in. horizontal boring and drilling machine, a 36-in. x 36-in. x 12-ft. planer, a 5-ft. radial drill and a 66-in., 300-ton wheel press. The Philadelphia Rapid Transit Co., Philadelphia, is the buyer of a 48-in. car wheel borer and an axle lathe. The Pennsylvania Railroad bought a 44-in. side-head boring mill. The Ford Motor Co., Detroit, has bought a 48-in., 200-ton wheel press, probably for use by the Detroit, Toledo & Ironton Railroad. The Atlantic Coast Line has also bought tools against its list.

The Anaconda Copper Mining Co., 25 Broadway, New York, has authorized plans for an addition to its zinc electrolytic plant at Great Falls, Mont., to increase the capacity about one-third. It is estimated to cost close to \$1,000,000 with machinery. The company is said to be considering enlargements in its copper works at the same place, with refining machinery and auxiliary equipment to cost in excess of \$500,000.

Frank P. Schmitt & Co., 808-16 Flushing Avenue, Brooklyn, manufacturers of wagons, trucks, etc., are asking bids on a general contract for a one-story addition, 74 x 90 ft., estimated to cost \$32,000 with equipment. Murray Klein, 39 Graham Avenue, is architect.

Emery Roth, 119 West Fortieth Street, New York, architect, has completed plans for a four-story automobile service, garage and repair building, 100 x 200 ft., at 3-17 East 102nd Street, to cost \$250,000 with equipment.

Fire, May 29, destroyed a portion of the five-story plant of the Modern Ice & Cold Storage Co., Inc., 283 Vernon Avenue, Brooklyn, with loss reported in excess of \$50,000. Rebuilding plans are under consideration.

The Astoria Light, Heat & Power Co., Astoria, L. I., a subsidiary of the Consolidated Gas Co., 130 East Fif-

teenth Street, New York, has plans for a one-story shop, 75 x 93 ft., to cost about \$30,000. A portion of the structure will be used for offices.

Fire, June 1, damaged a portion of the plant and equipment of the B. J. S. Woodworking Corporation, 312-16 East Ninety-fifth Street, New York. An official estimate of loss has not been announced. It is planned to rebuild.

Victor Mayer, 15 East Fortieth Street, New York, architect, has filed plans for a two-story automobile service, repair and garage building, 170 x 170 ft., to cost \$275,000 with equipment.

The Eastern New York Utilities Corporation, Albany, N. Y., has preliminary plans for an addition to its electric power house at Stottsville, N. Y., to cost \$75,000. J. E. Robbins is mechanical superintendent.

S. Karpen & Brothers, 111 West Thirty-seventh Street, New York, manufacturers of furniture, have work under way on an addition to their plant at Long Island City, to cost \$125,000.

The Rubel Coal & Ice Corporation, Glenmore Avenue and Junius Street, Brooklyn, has plans under way for a one-story wagon repair, blacksmithing and forge shop to cost \$25,000. Edward M. Adelson, 350 Stone Avenue, is architect.

John Mange, president of the Associated Gas & Electric Co., 61 Broadway, New York, has acquired a substantial interest in the Paul Smith Electric Light, Power & Railway Co., Paul Smiths, N. Y., including two hydroelectric power plants at Franklin and Union Falls on the Saranac River. The new owner plans expansion and will proceed with the construction of a third hydroelectric power station at Racquette Falls, on which work has been started.

Fuller & Robinson, 95 State Street, Albany, N. Y., architects, have plans for a four-story addition, 50 x 225 ft., to the automobile service, repair and garage of Westcott Burlingame, 97-99 Washington Street, to cost \$150,000.

The Manhattan Electrical Supply Co., 17 Park Place, New York, has plans for a new factory, 80 x 200 ft., at Jersey City, N. J., to cost \$60,000 with equipment. Russell G. Cory, 30 Church Street, New York, is architect and engineer.

The J. D. Johnson Co., Inc., Fifth and Washington Avenues, Long Island City, plumbing equipment and supplies, is asking bids on a general contract for a one-story storage and distributing building, with shop department, 90 x 198 ft., to cost \$45,000. Moore & Landsiedel, 148th Street and Third Avenue, New York, are architects.

Wilbur F. Earp, 150 Broadway, New York, architect, has completed plans for a three-story automobile service,

repair and garage building, 80 x 100 ft., at 1762 Park Avenue, to cost \$140,000 with equipment.

The General Electric Co., Schenectady, N. Y., has plans for a new building at its works to cost \$125,000.

The Katonah Lighting Co., Katonah, N. Y., is being acquired by the Harlem Valley Electric Corporation of the same place, which will consolidate with its properties. Plans are under consideration for the erection of a new electric power plant in this section.

The Fowler Sea Products Co., New York, care of Bogart & Pohl, 30 Church Street, engineers, plans the installation of an ice and refrigerating plant in its proposed fish-packing plant at Montauk Point, N. Y., consisting of three one and two-story buildings, estimated to cost \$100,000 with machinery. A general building contract has been let to Tucker & Lewis, 103 Park Avenue, New York.

The Crocker-Wheeler Co., Ampere, N. J., manufacturer of motors, generators, etc., is planning for enlargements, utilizing buildings constructed through the war period and never equipped owing to post-war conditions. It is purposed to install tools and other machinery for considerable increased output. A meeting of stockholders has been called on June 18 to approve the expansion, as well as a change of company name to the Crocker-Wheeler Electrical Mfg. Co.

The Susquehanna Silk Mills, 149 Madison Avenue, New York, plan the construction of a power house at their proposed mill on the Delaware River, Belvidere, N. J., to cost \$150,000.

Property and equipment of the Seaboard Steel Products Co., Fourth Avenue and Ogden Street, Newark, N. J., and 135 West Side Avenue, Jersey City, N. J., will be sold at a public auction on the premises, June 17 to 18, at each location, respectively.

Harry G. Bach, 63 Schureman Street, New Brunswick, N. J., architect, has plans for a two-story automobile service, repair and garage building, 60 x 130 ft., to cost \$80,000.

Herman Gumz, Newark, operating a boiler and plate works at 7 Greenwood Lake Railroad Avenue, has plans for a one-story addition, 105 x 135 ft., to cost \$35,000. J. O. Averill, 16 Fulton Street, is architect.

The Backus Water Motor Co., Pennsylvania Avenue and Vanderpool Street, Newark, is retiring from business and will dispose of its entire property, equipment, etc., to other interests.

The Bayonne Steel Products Co., 264 Jelliff Avenue, Newark, will soon ask bids for a three-story and basement addition, 75 x 95 ft., to cost \$50,000. Neil J. Convery, 964 Broad Street, is architect.

The Public Service Electric & Gas Co., Terminal Building, Newark, has applied for permission to issue new securities in amount of \$25,000,000, the fund to be used in connection with the proposed \$55,000,000 capital construction program, including additions to power plants and transmission lines. The system will be tied in with that of the Philadelphia Electric Co., Philadelphia.

The Vosburg Miniature Lamp Co., Mitchell Street, Orange, N. J., manufacturer of incandescent lamps, has filed plans for a new one-story plant to cost approximately \$25,000.

The J. G. White Engineering Corporation of New York, which has been doing considerable work for the Staten Island Edison Corporation, St. George, Staten Island, N. Y., has been commissioned by them to design and construct an extension to the boiler house at Livingston, now under construction, consisting of a complete new building for two boilers, with the installation of one new boiler and superheaters of 1385 hp., together with stokers, induced and forced draft apparatus, coal and ash handling equipment, electric equipment, piping, etc., and an additional stack.

The plant and equipment of the Bound Brook Engine & Mfg. Co., Bound Brook, N. J., is to be sold at public auction by Joseph P. Day, auctioneer, Monday, June 22, at 10 o'clock, on the premises. It was owned formerly by the American Engine Co. The real estate comprises four acres of land, a one-story brick building, comprising 52,138 sq. ft. of floor space, fully sprinklered. The property has a railroad siding.

The American Iron Nipple Mfg. Corporation, 159 North Fourth Street, Brooklyn, is in the market for two Landis double head pipe threading nipple machines. It is also interested in other sizes of double head Landis machines.

Mena & Wettlaufer, Inc., Cumberland National Bank Building, Bridgeton, N. J., has recently been incorporated to do general contracting and engineering. Edward Mena is one of the principals.

The Controlled Air Cushions, Inc., recently was incorporated to manufacture mechanical devices. Plans are

yet undeveloped. Address care of Creske-Everett, Inc., 300 Madison Avenue, New York.

The Atlantic Pipe & Steel Co., 30 Church Street, New York, is inquiring for pipe tubes and surplus lots of steel and machinery.

Philadelphia

PHILADELPHIA, June 8.

CONTRACT has been awarded by the Philadelphia & Reading Railroad, Philadelphia, to the Hughes-Foulkrod Co., Commonwealth Building, for its one-story freight car repair shop at the Reading works, to be 335 x 350 ft., estimated to cost in excess of \$500,000 with equipment. Otto Herald is company architect.

The National Label Co., Ontario and Carlisle Streets, Philadelphia, manufacturer of paper products, has acquired property, 75 x 106 ft., at Nineteenth Street and Indiana Avenue, as a site for a new plant.

Fire, May 29, destroyed a portion of the tank storage department at the plant of the Sun Oil Co., Marcus Hook, Pa., with loss of \$50,000. It will be rebuilt. Headquarters of the company are in the Finance Building, Philadelphia.

Ovens, power equipment, conveying and other machinery will be installed in the new plant to be erected at Hunting Park and McMichael Streets, Philadelphia, by the Tasty Baking Co., 2801 Huntington Park, to cost \$180,000, for which a general contract has been awarded to the Turner Construction Co., 1713 Sansom Street.

The Horn & Brannen Mfg. Co., 427 North Broad Street, Philadelphia, manufacturer of gas and electric fixtures, has leased property at 441-51 North Broad Street for a new works for considerable increase in output.

Bottling machinery, mixing equipment, vats and other equipment will be installed in the one-story plant, 60 x 160 ft., to be erected by the Queen City Printing Ink Co., Eleventh and Hamilton Streets, Philadelphia, for which bids will soon be asked on a general contract. H. B. Weldon, 1817 Callowhill Street, is architect. O. C. Davis is manager.

Fire recently destroyed a number of buildings on the block bounded by Thirtieth and Thirty-first, Chestnut and Walnut Streets, Philadelphia, including structures occupied by Bridgman & Co., plumbing equipment and supplies; General Motor Devices Corporation; Laycock & Burns, heating equipment and supplies; Hercules Pumping Co.; Turner Asbestos Roofing Co.; Construction Equipment & Supply Co., and the Hart & Crouse Oil Burner Co., with total loss reported in excess of \$1,000,000. The different buildings will be replaced.

Huff, Daland & Co., Ogdensburg, N. Y., manufacturer of airplanes and parts, is arranging for the immediate removal of a portion of its plant to Bristol, Pa., previously used by the Merchants Shipbuilding Corporation, recently acquired for about \$200,000. The buildings will be remodeled and equipped for the manufacture of all-metal aircraft, training planes, mail and express airplanes, and seaplanes; additional machinery will be installed for increased output, including an aero-dynamical laboratory, humidity heating control system, etc. The plant will give employment to more than 200 men. Thomas H. Huff is president, P. H. Gray, plant engineer, and C. P. Swan, superintendent of production.

The MacAndrews & Forbes Co., Third and Jefferson Streets, Camden, N. J., manufacturer of wallboard, boxboard and kindred products, has awarded a general contract to Barclay White & Co., 1713 Sansom Street, Philadelphia, for a three-story and basement addition, 56 x 100 ft., to cost \$50,000.

Fire, June 4, damaged a portion of the three-story plant of the General Woodworking Co., 1216-22 North Mascher Street, Philadelphia. An official estimate of loss has not been announced. It is planned to rebuild.

Fire, May 31, destroyed a portion of the service, repair and garage building of the Williamsport-Bulck Co., Williamsport, Pa., local representative for the Buick automobiles, with loss reported at \$60,000 including equipment. It is planned to rebuild.

The Tremont Silk Co., Allentown, Pa., care of Jacoby & Everett, Commonwealth Building, plans the erection of a one-story power house at its new mill at Emmaus, Pa.

Fire, June 4, destroyed a portion of the plant of the Atlas Mineral Products Co., Albany, Pa., manufacturer of paint pigments, etc., with loss estimated at \$25,000 including machinery. It is proposed to rebuild. Max Wirts heads the company.

Bids are being asked until June 25 by George P. Black, secretary Board of Education, Gettysburg, Pa., for the erection of the proposed Kurts high school, estimated to cost \$125,000. It is planned to install manual training equipment. Bernard Starr, Harrisburg, Pa., is architect.

The Crane Market

THERE is a fair volume of inquiry for overhead equipment, but few purchases are reported this week. The locomotive crane field continues quiet. The construction contract of the Chesapeake & Ohio Railroad for shops at Russell, Ky., is understood to have been awarded to Joseph E. Nelson & Sons, Chicago, and it is expected that the contractor will purchase the overhead equipment, including the 15-ton electric, 10-ton hand power crane, 2-ton mast jib hand power crane and 2-ton hand power wall crane, 28 1-ton chain blocks, two 50-ton drop tables and 300-ton locomotive hoist. It is reported that the Chesapeake & Ohio has issued a direct inquiry for a list including a 100-ton, 50-ton and 15-ton electric crane and a 10-ton hand power crane. The 100-ton overhead crane for the Phoenix Utility Co., New York; the 30-ton gantry crane for the Lehigh Valley Rail-

road, New York; two 15-ton monorail hoists and a 25-ton 1-motor crane for the West Virginia Pulp & Paper Co. are still pending. The Missouri Pacific is in the market for two 10-ton cranes.

The Pittsburgh district is quiet. The Carnegie Steel Co., reported last week as having closed on 13 cranes and a charging machine for the Homestead works, has inquired for seven more electric cranes for the plate mills at Homestead.

Among recent purchases are:

B. F. Perkins & Son, Inc., Holyoke, Mass., a 10-ton, 40-ft. span, 3-motor overhead crane from an unnamed builder.

Warren Foundry & Pipe Co., Phillipsburg, N. J., a 15-ton, 58-ft. span overhead crane from a Milwaukee builder.

John Healy, Pottstown, Pa., and associates have acquired the local plant of the Hydro-United Tire Co., manufacturer of automobile tires, at a receiver's sale for \$175,000. The new owners are said to be arranging for the operation of the plant.

The Delaware, Lackawanna & Western Railroad Co., 90 West Street, New York, is reported to be arranging for the construction of a coal storage and distributing plant and auxiliary freight yards, with shop facilities, on property near Wyoming, Pa., comprising about 60 acres.

The Globe Fibre Specialty Co., Third and Orange Streets, Wilmington, Del., has been incorporated with \$150,000 capital stock to manufacture tubes, sheets, rods and specialties. It has taken a two-year lease on a building and at the expiration of this period will build its own plant. It will be in the market for fiber machinery, acid, etc. R. M. Clinton is secretary.

South Atlantic States

BALTIMORE, June 8.

BIDS will be received by the Board of Awards, office of the City Register, City Hall, Baltimore, until June 17, for tools, machinery, equipment and supplies for the department of education, as per specifications at the office of the Board of School Commissioners, Madison and Lafayette Avenues. John H. Roche is secretary.

The Eastern Shore Gas & Electric Co., Laurel, Del., will acquire the municipal electric light and power plant at Snow Hill, Md., which will be operated by the Worcester Gas & Electric Co., a subsidiary. It is planned to make extensions and improvements, and install additional equipment.

The Globe Fibre Specialty Co., Wilmington, Del., recently organized, will establish a plant at 103-5 West Third Street, for the manufacture of sheets, tubing, rods, etc. W. L. Andrews is president, and Russell M. Clinton, secretary.

M. H. Harmony, High Point, N. C., has tentative plans for the construction of a factory to manufacture electric irons and kindred products, estimated to cost \$20,000 with equipment.

The Albemarle Paper Mfg. Co., Tredegar Building, Richmond, Va., has awarded a general contract to Claiborne & Taylor, Inc., Addison Street and Monument Avenue, for a four-story and basement plant, 100 x 135 ft., to cost \$110,000.

The R. S. Armstrong & Brothers Co., 676 Marietta Street, Atlanta, Ga., has inquiries out for a 150-hp. motor, three-phase, 60-cycle, 550 volts.

The Roanoke-Staunton River Power Co., Roanoke, Va., has preliminary plans for its proposed hydroelectric generating station on the Roanoke River. The project will consist of three power dams at Lynnvill Ford, Deerwood Ford and Anthony's Ford, with station for an initial capacity of 40,000 hp. Equipment purchases will be made in the near future.

The Public Improvement Commission, Baltimore, has approved a fund of \$75,000 for extensions and improvements in the municipal pumping plant on Hillen Road. V. Bernard Siems, water engineer, department of water, is in charge.

Ovens, power equipment, conveying and other machinery will be installed in the three-story plant, 51 x 110 ft., to be erected by Nolde Brothers, Inc., Richmond, Va., estimated to cost \$115,000, of which about \$60,000 will be used for machinery. A general building contract has been let

to James Fox & Son, 2501 East Franklin Street. The McCormick Co., Inc., 121 South Negley Street, Pittsburgh, is architect and engineer.

The Consolidated Gas, Electric Light & Power Co., Lexington Building, Baltimore, is disposing of a bond issue of \$9,000,000, a portion of the proceeds to be used for extensions and improvements in power plants and system.

The Liberty Pin Co., Roanoke, Va., is considering the purchase of machinery for the manufacture of wood insulating pins, to be installed in a local plant.

The City Council, High Point, N. C., is considering the installation of pumping machinery at the municipal waterworks in connection with proposed extensions and improvements estimated to cost \$350,000.

The Board of Trustees of the Centralized High School District, Blacksburg, S. C., is considering the installation of manual training equipment in its proposed local high school, estimated to cost \$110,000.

The American Smelting & Refining Co., Canton, Baltimore, is pushing construction on the new copper rod and wire mill at its local works, to cost \$500,000 with machinery, and expects to have the structure ready for equipment in the near future.

The Sinclair Refining Co., 45 Nassau Street, New York, is said to be contemplating the construction of a new oil storage and distributing plant at Charlotte, N. C., comprising three one-story buildings with pumping plant, estimated to cost \$75,000, with equipment. A site has been acquired on Elliott Street. The company is also reported to be considering the erection of a similar plant at Hamlet, N. C.

The Board of Education, Greenwood, S. C., is considering the installation of manual training equipment in its proposed two-story high school estimated to cost about \$125,000, for which bids are being asked on a general contract until June 23. J. C. Hemphille, Greenwood; and Berryman & Kennedy, Palmetto Building, Columbia, S. C., are associated architects.

E. Quinerly, P. O. Box 519, Greenville, S. C., plans the purchase of quarry equipment for a local installation, and has inquiries out for crushers, derrick, dump cars and kindred equipment.

The Hackney Wagon Co., Wilson, N. C., is considering a department for the manufacture of road-scraping machines and parts. Certain equipment, including pans, etc., will be purchased and assembled at the plant.

Thomas Mullan, 3945 Greenmount Avenue, Baltimore, has plans under way for a one-story automobile service, repair and garage building, 190 x 250 ft., estimated to cost \$55,000.

Pittsburgh

PITTSBURGH, June 8.

IT has been a rather quiet week in the local machine tool market although a fair number of single orders have been placed. Companies with lists out are taking their time about closing. Strictly new inquiries are not very numerous, but sellers who are putting forth intensive efforts are getting some orders against which no formal inquiries have been issued. Demand still is strongest for special purpose tools.

The Wisconsin Steel Co., South Chicago, has placed the order for a two-high 40-in. universal cross-country type structural mill, and auxiliary equipment, with the United Engineering & Foundry Co., Pittsburgh.

The Bessemer Gas Engine Co., Grove City, Pa., is having plans prepared by Frank D. Chase, Inc., engineer and architect, 720 North Michigan Avenue, Chicago, for a machine shop 150 x 280 ft., to be equipped with 10- and 40-ton cranes, and power plant 50 x 100 ft. Other plant extensions are also being provided for.

A. M. Brown, Bessemer Building, Pittsburgh, architect, has been engaged by the Manchester Auto & Machine Co., 1216 Liverpool Street, to prepare plans for its proposed factory, two stories, 150 x 180 ft., on site lately acquired, estimated to cost \$200,000 with equipment. J. McNeill is president.

The Pittsburgh & Lake Erie Railroad Co., South Smithfield Street, Pittsburgh, has awarded a general contract to J. H. DeCarpentier & Sons, Youngstown, for a new one and two-story engine house addition at Newell, Pa., including additional repair facilities, estimated to cost \$150,000 with equipment. A. R. Rayner is company engineer.

The Princeton Water Co., Princeton, W. Va., contemplates the installation of additional pumping machinery in connection with proposed extensions in waterworks to double the present capacity.

The Bluefield Laundry Co., Bluefield, W. Va., plans the construction of a power house at its proposed works, estimated to cost \$200,000 with equipment. G. M. Barger is president.

W. E. Harris, First National Bank Building, Huntington, W. Va., has inquiries out for a 15 to 25-kw. turbine-driven generator, a.c., or d.c.

The Rosedale Coal Co., Poland, Pa., is planning for the early rebuilding of the portion of its tippie at the local No. 2 mine, destroyed by fire May 31. John L. Hatfield is vice-president.

The St. Marys Clay Products Co., St. Marys, Pa., has awarded a general contract to the Hughes-Foulkrod Co., Pittsburgh, for its one-story and basement plant, 250 x 255 ft., for the production of vitrified sewer pipe. A power house and machine shop will be built. The works will cost close to \$400,000 with machinery.

M. L. Luterma, 304 Peoples' Bank Building, Pittsburgh, has plans for a two-story automobile service, repair and garage building, 75 x 150 ft., to cost \$70,000 with equipment.

The United Electric Light Co., Wilmerding, Pa., has preliminary plans for a new steam-operated electric generating station on the Monogahela River, near Braddock, Pa., to cost \$150,000. Day & Zimmerman, Inc., 1600 Walnut Street, Philadelphia, is engineer.

George E. Herck, Moore Building, Charleston, W. Va., is considering the purchase of water supply equipment, including pumping machinery, etc., and has inquiries out for information.

Buffalo

BUFFALO, June 8.

WORK will begin on a new one-story hammer shop, 100 x 460 ft., at the plant of the American Locomotive Co., Dunkirk, N. Y., for which a general contract recently was let to the Frid Construction Co., 187 Delaware Avenue, Buffalo. The expansion will include a new crane runway.

The Board of Water Commissioners, Dunkirk, N. Y., has authorized plans for a one-story municipal electric light and power house. The project will be carried out in connection with a proposed filtration plant for the city waterworks, the entire improvements to cost about \$200,000 with equipment.

The Kingan Provision Co., Fulton Street, Syracuse, N. Y., will erect a new refrigerating and cooler house addition, estimated to cost \$100,000 with equipment. La Vaute & Mulranen, Herald Building, are architects.

The Huntley Mfg. Co., Silver Creek, N. Y., manufacturer of flour mill machinery, etc., is arranging for the purchase of a site for the construction of a new plant to provide increase in present capacity. Plans will probably be drawn during the summer.

Fire, May 25, destroyed a portion of the refrigerating section at the plant of the S. & S. Packing Co., Lynbrook, N. Y., and other portions of the factory, with loss reported at \$50,000, including equipment. It is planned to rebuild.

The Board of Water Commissioners, Buffalo, has authorized plans for the installation of a pumping plant for booster service in the North Main Street district. A steel tank and tower will also be built.

The Board of Directors, Syracuse University, Syracuse, N. Y., has plans under way for a new steam-operated power house to cost \$50,000 with equipment. W. H. Peck, Third National Bank Building, Scranton, Pa., is architect.

The Hellos Mfg. Corporation, Buffalo, recently incor-

porated, will manufacture a line of specialties, including machinery guards, valves, etc., and is planning to add electrical devices later. At present most of the work is done on a contract basis, the company operating only an assembling plant. It expects to establish its own plant later and is looking for a site. Andrew Flohr is president and H. M. Feine, secretary.

Plans have been filed by the Frontier Elevator & Mill Co., Inc., Buffalo, for a concrete grain elevator on the Blackwell ship canal to cost \$225,000, for which transmission, conveying, hoisting and power equipment will be required.

The Binghamton Light, Heat & Power Co., Binghamton, N. Y., has work under way on a new hydroelectric power house at Oswego, N. Y., with initial capacity of 750 kw.

The Jamestown Car Parts Mfg. Co., Allen Street Extension, Jamestown, N. Y., manufacturer of automobile radiators and metal furniture, will purchase welders, punches, shears and other equipment for \$50,000 addition to its plant under construction. Gustave Lawson is secretary.

Detroit

DETROIT, June 8.

CONTRACT has been let by the Timken-Detroit Axle Co., Detroit, manufacturer of automobile axles, to the Walbridge Aldinger Co., Penobscot Building, for an addition to its plant on Fort Street to cost in excess of \$65,000.

The Board of Education, Jackson, Mich., plans the installation of manual training equipment in its proposed three-story and basement senior high school estimated to cost \$1,200,000, for which bids on a general contract are expected to be called during the summer. Childs & Smith, 720 North Michigan Avenue, Chicago, and Leonard H. Field, Peoples National Bank Building, Jackson, are associated architects.

The Detroit Edison Co., 2000 Second Avenue, Detroit, is disposing of a bond issue of \$5,000,000, a portion of the proceeds to be used for extensions in power plants and system. It has plans nearing completion for a new automatic power substation on Beaubien Street, estimated to cost \$350,000.

The Rich Steel Products Co., Battle Creek, Mich., has awarded a general contract to the Austin Co., 160 North La Salle Street, Chicago, for two one-story additions, 38 x 116 ft. and 77 x 85 ft. One of the structures will be equipped as a foundry.

The Board of Education, Detroit, has plans under way for a new central power house for school service, estimated to cost \$570,000 with equipment.

The Detroit Aluminum & Brass Corporation, Detroit, recently organized with a capital of \$250,000, has taken over the former motor truck plant of the Graham Brothers Co. at Conant Road and Christopher Street, totaling about 45,000 sq. ft. of floor space, and will use for the production of brass, bronze and aluminum castings, motor bearings, etc. J. P. Carrille, formerly head of the McAdamite Aluminum Co., is president and treasurer; L. G. Hooker, heretofore treasurer of the General Aluminum & Brass Mfg. Co., is vice-president and secretary. Philip J. Fobert will act as production manager of the bearing division.

The Board of Education, South Haven, Mich., plans the installation of manual training equipment in its two-story high and grade school, estimated to cost \$225,000, for which a general contract has been awarded to the O. F. Miller Co., Kalamazoo, Mich. Billingham & Cobb, Press Building, Kalamazoo, are architects and engineers.

Fire, May 27, destroyed a portion of the works of the Michigan Limestone & Chemical Co., Calcite, Mich., with loss estimated at \$75,000. It is planned to rebuild.

The McCord Radiator & Mfg. Co., East Grand Boulevard, Detroit, manufacturer of automobile radiators, etc., has acquired the business of the National Radiator Co., including equipment and all other assets. The last noted company was at one time a division of the National Can Co. The new owner plans to transfer operations to its main plant, discontinuing the National works for radiator production. A department will be operated, also, for the manufacture of spiral tubing for heating radiators, previously made by the National company.

A. W. Lau, 402 Sun Building, Detroit, formerly connected with the Lau Iron Works, Youngstown, Ohio, is organizing a company to fabricate structural steel and is in the market for machinery and cranes.

The Huebner Screen Door Co., Farnsworth Avenue and Grand Trunk Railway, Detroit, has been incorporated by the three sons of Edward Huebner, who established a business as manufacturer of screen doors and similar products 28 years ago. The new corporation recently completed a factory devoted exclusively to making screens for the hardware trade.



THIS 65-ton casting was recently cast at the Schenectady works of the General Electric Co. It is one-half of the exhaust hood of a 60,000-kw. turbine. The casting measures 26 ft. 8 in. in overall length, and its total weight is 129,300 lb. A special pit had to be dug in the foundry to accommodate it. The men in the picture are the coremakers, molders, chippers, etc., who worked on the casting.

Albert G. Huebner is president and Frederick H. Huebner, vice-president and general manager.

The Soper Sanitary Kitchen Co., 108 East Woodbridge Street, Detroit, has been incorporated with capital stock of \$400,000 and 100,000 shares of no par value stock to manufacture household appliances and equipment. At present the company conducts all operations, but contemplates manufacturing its standard product on a contract basis. Materials involved include galvanized metals, solder, hinges, damper keys, door fasteners, sockets, screws, nuts and bolts and toggle switches. H. W. Soper is president.

The Morey Rim Tool Co., Blissfield, Mich., has been incorporated to manufacture tools for removing automobile rims from tires. It expects to add to its line several other automobile accessory products. Parts are stamped by an outside concern, the Morey company doing the assembling. It is interested in hearing from manufacturers equipped for this work. E. R. Drake is general sales manager.

Chicago

CHICAGO, June 8.

THE Illinois Central has closed against its list for the new Markham, Chicago, shops, and also for part of its regular budget requirements. Its purchases so far are estimated at \$200,000. The remainder of the budget list will probably be bought within the next week or two. The Rock Island Lines have placed an order for an axle lathe. The Sante Fe will probably take action on its pending inquiries shortly. The Burlington list is now in the hands of the purchasing department, but just when orders will be distributed is still uncertain.

Industrial buying is showing signs of revival. The International Harvester Co. has bought considerable miscellaneous equipment for its Milwaukee tractor plant, including three milling machines. The Jones Gear Co., a new organization, Heyworth Building, Chicago, manufacturing automobile steering gears, has closed for two turret lathes, a shaper and a sensitive drill. The Barber-Colman Co., Rockford, Ill., has placed orders for a dieing machine and two milling machines. The Maytag Co., Newton, Iowa, has bought an upright drill, three milling machines and a number of used tools. The Nash Motors Co., Kenosha, Wis., has bought additional equipment, including various types of drilling machines, required by a recent change in the design of its cylinder block.

Templeton, Kenly & Co., 1020 South Central Avenue, Chicago, have awarded contract for a one-story addition, 62 x 72 ft., to cost \$5,000.

The International Tool & Machinery Co., 1207 Frontier Avenue, Chicago, has awarded contract for a two-story machine shop and factory, 44 x 60 ft., at 642-44 Division Street, to cost \$15,000.

The American Can Co., 104 South Michigan Avenue, Chicago, has awarded contract for a five-story warehouse, 62 x 230 ft., at 1848-66 Clybourn Avenue, to cost \$170,000.

The William Schukraft & Sons Co., 1205-11 West Washington Street, Chicago, has awarded contract for four automobile and wagon paint shops, 139 x 200 ft., 40 x 118 ft., 40 x 115 ft., 32 x 67 ft., to cost \$350,000.

The Wallace Brothers Waste Co., 3346-56 West Forty-eighth Place, Chicago, has awarded contract for a two-story factory, 50 x 123 ft., to cost \$50,000.

The Maytag Co., manufacturer of washing machines, Newton, Iowa, will construct a six-story plant addition.

The Insull interests, which control the Commonwealth Edison Co., Chicago, and other public utilities, have let the contract for filling in 100 acres on a site bordering Lake Michigan, at Robertsdale, Ind., just east of the Indiana-Illinois boundary. It is announced that a 1,000,000-kw. electric generating station will be built.

Gottfried Aga, Colton, S. D., has purchased a machine shop from the Peter Hanson estate at Madison, S. D., and will move to that city.

The Model Brass Works, Decatur, Ill., will erect a new plant, 60 x 80 ft., in East Decatur Street. It manufactures brass, bronze and aluminum castings.

Clawson & Bals, Inc., 4701-7 West Lake Street, Chicago, recently granted a charter, is an incorporation of a partnership of the same name. It will continue to re-babbit automotive bearings and does not contemplate further expansion at this time. Officers are: President, John Z. Clawson; vice-president and treasurer, A. F. Bals, secretary, Frank J. Dvorak; assistant treasurer, Kurt Markus.

The Anchor-Bracket Corporation, Aurora, Ill., recently incorporated, has leased a plant in that city and is manufacturing anchor brackets, for anchoring slits to a foundation, under patents granted to Charles Finette, inventor and president of the company. Officers are: President, Charles Finette; vice-president, Carl Finette; secretary-treasurer, W. J. Golden; assistant treasurer, M. Finette; assistant secretary, A. D. Golden; director of sales, F. E. Hannon.

The Arrow Mill Co., 2322-26 South Western Avenue, Chicago, manufacturer of battery separators, has work under way on an addition to provide for large increase in output.

The Griffin Wheel Co., 332 South Michigan Avenue, Chicago, manufacturer of railroad car wheels, is reported to be planning the erection of new works at Salt Lake City, Utah, and purposes to have the first unit ready for service by the close of the year.

The Charter Gas Engine Co., Sterling, Ill., is having preliminary plans prepared by Frank D. Chase, Inc., 720 North Michigan Avenue, Chicago, architect and engineer, for a new one-story foundry. W. A. Robinson is president and general manager.

The Josten Mfg. Co., Owatonna, Minn., manufacturer of jewelry, metal novelties, etc., has plans for a new two-story and basement factory, 60 x 100 ft., for which bids will soon be asked on general contract. It will cost about \$35,000. Jacobson & Jacobson, 430 Oak Grove Street, Minneapolis, Minn., are architects.

Bids will be asked about July 1 by the Jordan Machine Tool Co., Minneapolis, Minn., for its one-story and basement plant, 70 x 110 ft., at 1854 East Twenty-eighth Street. C. J. Bard, 2 North Tenth Street, is architect. L. E. Jordan is president.

The Klondike Incubator Co., 315 South West Ninth Street, Des Moines, Iowa, plans the erection of a two-story factory, 80 x 210 ft., to cost \$45,000.

The Wade & Burnight Motor Co., Sioux City, Iowa, is considering the erection of a new one-story plant, 50 x 150 ft., for the manufacture of automobile equipment, at 310 West Seventh Street.

The City Council, Marengo, Ill., is asking bids until June 25 for a 450-gal. per min. centrifugal pump with motor, gasoline and appurtenances, for use in connection with extensions in the municipal waterworks. C. H. Wolben is city clerk. The Randolph-Perkins Co., First National Bank Building, Chicago, is engineer.

Henry Schmidt, 5525 South State Street, Chicago, is having plans drawn by Harry E. Stevens, 4022 West Madison Street, architect, for a two-story and basement furniture factory, 50 x 160 ft., estimated to cost \$150,000 with machinery.

The Puget Sound Copper Co., Urbana, Ill., recently was incorporated to mine and distribute copper and other metal products. G. N. Clark is president and W. H. DeLong, vice-president.

Cincinnati

CINCINNATI, June 8.

MACHINE tool production continues at a fairly good rate, although the market is somewhat spotty. Most large builders are keeping up to a better sales level than at any time this year. Several leading manufacturers state that business has been better the past month than at any period since 1920. Placing of a sizable order by the Hudson Motor Car Co. for shapers and radial drills was the feature of the local market the past week. The Ford Motor Co. has ordered a number of special machines from the Morris Machine Tool Co. Other manufacturers in the automotive industry have been placing business here in the last 10 days.

Railroad purchases are confined to scattered orders for single machines. The foreign field is still interesting a number of local builders who are shipping automatic machines and also special machinery to Europe. A manufacturer of boring mills shipped a machine this week to Scotland and is in receipt of an attractive inquiry from Budapest, Hungary. The textile and electrical fields are yielding little business at present.

Planer manufacturers express satisfaction with the volume of orders being booked. The Cincinnati Planer Co. received an order for a 36-in. machine from a Florida manufacturer and one for a 43-in. planer from a manufacturer in the Northwest. Milling machine companies are running on a fairly good schedule and report that considerable business has come from automobile plants. Several lathe builders state orders have fallen off in the past two weeks. Improved conditions are reported by manufacturers of turret lathes. One company in this territory had the biggest business in May that it has had in five years. Machinery dealers report more liberal buying.

The City Council, Portsmouth, Ohio, is considering the expenditure of \$35,000 for the purchase and installation of a two-unit incineration plant.

The Fenton Foundry Supplies Co., Dayton, Ohio, has purchased a unit of the former plant of the Davis Sewing Machine Co., Dayton, which will be the future home of the company. William Fenton is president and E. P. Fenton, secretary.

The plant and equipment of the Recording & Computing Machine Co., Dayton, Ohio, will be sold at auction June 23 to 25. It was engaged in munition work during the war and the equipment consists of about 1300 machine tools, including 200 bench milling machines, 100 screw machines, 500 spindles, drilling machines and 90 vertical engraving machines.

The National Radiator Co., Johnstown, Pa., has awarded a general contract to the H. K. Ferguson Co., Euclid Avenue, Cleveland, for a new factory branch and distributing plant at Cincinnati, to cost about \$37,000.

S. Peal, 440 Armory Avenue, Cincinnati, will build a one-story sheet-metal and tin-working shop at 2105-9 Reading Road, for which plans have been drawn by Stewart & Stewart, Cincinnati, architects.

The Southern States Ice Co., Bell Buckle, Tenn., is considering the erection of a new ice-manufacturing plant, with machinery electrically operated, to cost approximately \$45,000.

The Highland Rim Mfg. Co., Portland, Tenn., is said to be planning the construction of a new factory for the manufacture of crates, hampers and kindred products, estimated to cost \$100,000 with machinery.

The Mills Equipment Co., Chattanooga, Tenn., has inquiries out for a gasoline locomotive, from 4 to 7-ton capacity, Plymouth type preferred, 36-in. gage; also for a number of all-steel dump cars, 2-yd. capacity each, 36-in. gage.

The Town Council, Clinton, Tenn., plans the installation of pumping machinery and accessory equipment in connection with a proposed municipal waterworks, estimated to cost \$110,000. It is proposed to ask equipment bids in August. Campbell Wallace, Empire Building, Knoxville, Tenn., is engineer.

The Columbia Iron Works, 2125 Reading Road, Cincinnati, has plans for a one-story addition to cost about \$17,000.

The L. J. Breed Equipment Co., James Building, Chattanooga, Tenn., has inquiries out for a double-cylinder, double-drum hoisting engine, 8½ x 10 in., with boiler and accessory equipment. Also, for gravel-handling equipment, steam-operated, for barge, consisting of 2-drum hoist, with swinger for stiff leg derrick to operate a 1-yd. capacity bucket.

Cleveland

CLEVELAND, June 8.

DETROIT automobile companies purchased a few machine tools the past week and inquiries are pending from the Ford, the Packard, Hudson, Chevrolet and the Hupp motor car companies. One dealer has inquiries for about 35 lathes, milling machines and shapers from Detroit car builders. The demand for automatic screw machines is more active. One local manufacturer reports a better volume of sales than at any previous time in the past five years. In addition to taking 40 machines for Italy, previously reported, this company has booked other good business from Sweden, England and Germany.

The market in the Cleveland territory has quieted down, as indicated by the falling off in the volume of scattered orders and inquiries for small lots of single machines. In the railroad field the Mobile & Ohio is inquiring for four turret lathes.

The Buckeye Traction Ditcher Co., Findlay, Ohio, manufacturer of road machinery, has completed plans for a one-story addition, 100 x 175 ft. The Devore Co., Findlay, is architect.

The McBee Binder Co., Athens, Ohio, will erect a one-story machine shop, 60 x 122 ft. Bids are being taken.

K. V. Painter will erect an addition to a factory at 1966 East Sixty-sixth Street, Cleveland, which will be occupied by the Solenberger Piston Ring Co. The H. K. Ferguson Co. is architect and general contractor.

Manual training equipment will be required for a high school to be built at Piketon, Pike County, Ohio. J. W. Downing is clerk of the Board of Education.

Mullally & Plasket, Canton, Ohio, operating a local garage and service station, are in the market for a cylinder reboring machine, small lathe and other equipment, to replace that recently destroyed by fire.

Indiana

INDIANAPOLIS, June 8.

PRELIMINARY plans are being considered by the American Spring Clutch Co., Indianapolis, recently organized, for the erection of a new local factory to manufacture a new drive mechanism for automobiles, to be known as the L. G. S. starter driver. The initial works are reported to cost \$10,000 with equipment. Albert Lieber is president, and Frank Grift, vice-president.

Edgar Rice, Indianapolis, has leased property at 544 Indiana Avenue and will establish a machine shop and automobile parts and repair works.

The Ellettsville Water Co., Ellettsville, Ind., plans the installation of pumping machinery, steel tank and tower, and accessory equipment in connection with a proposed waterworks, estimated to cost \$45,000. Cole, Asire & Moore, J. M. S. Building, South Bend, Ind., are engineers and will make all equipment purchases.

The Hammond Brass Works, Inc., Hammond, Ind., plans to rebuild the portion of its works destroyed by fire May 30, with loss of \$75,000 including equipment. The plant of the Paxton Lumber Co., on adjoining site, was also destroyed, with loss of more than \$300,000 including machinery.

The Wabash Valley Electric Co., Clinton, Ind., has applied for permission to issue bonds for \$160,000 and stock for \$106,000, the proceeds to be used for extensions in power plants and systems.

Gerding & Aumann, 437 Wallace Street, Fort Wayne, Ind., operating a sheet metal and roofing works, have plans for a one and two-story addition, 75 x 115 ft., to cost approximately \$25,000. Charles R. Weatherhogg, 250 West Wayne Street, is architect.

The Calumet Gas & Electric Co., Gary, Ind., will issue bonds and stock in amount of \$1,000,000, a portion of the fund to be used for extensions and improvements in power plants and system. It will also take over a number of existing properties and will consolidate with its system.

The Elkhart-Buick Co., Elkhart, Ind., local representative for the Buick automobile, has plans for a one-story addition to its service, repair and garage building, 40 x 165 ft.

J. W. Campbell, Indianapolis, has leased property at 1514 Howard Street for a new metal-working and tin shop.

The Board of Education, Fort Wayne, Ind., plans the installation of manual training equipment in its proposed new North Side high school, estimated to cost \$750,000, for which it is expected to ask bids on a general contract early in August. Charles R. Weatherhogg, 250 West Wayne Street, is architect.

Milwaukee

MILWAUKEE, June 8.

AUTOMOTIVE business, while far from volume, nevertheless lends the greatest aspect of activity to machine tool business. Builders of milling machines are getting some fair orders, generally for one or two items at a time, and their operating schedules are well maintained. The demand is not nearly so active as a year ago, when considerable tooling was being done to step up output. The present effort is largely to replace obsolete or worn-out equipment rather than to provide increased capacity. The Chicago, Milwaukee & St. Paul Railway receivers are believed to be nearly ready to place orders for some important items for the West Milwaukee shops to handle a big locomotive and car reconstruction and reconditioning program, but details are still lacking.

The Continental Faience & Tile Co., Milwaukee, has been incorporated with \$75,000 capital stock and taken over the former plant of the Lawson Airplane Corporation in South Milwaukee which it will remodel and reequip for the production of fancy floor and wall tile. The building is 50 x 200 ft. E. P. Butler, 420 Milwaukee Street, Milwaukee, is president, and Carl Bergmans general manager.

The Ajax Auto Parts Co., Racine, Wis., is preparing to utilize more of the available area of the former Higgins Spring & Axle Co. works, which it acquired two years ago, and will soon be in the market for additional equipment for the production of automobile jacks and a line of stamped and forged parts and materials, as well as accessories. John W. Bate is president and general manager.

The Jefferson County, Wis., Asylum Trustees, Oscar F. Roessler, Jefferson, chairman, will remodel and enlarge the power and heating plant at an estimated cost of \$25,000. Three new boilers and some other equipment will be purchased. The work is in charge of Arthur Kuenzli, architect and consulting engineer, Watertown, Wis.

The Fox River Boiler Works, Appleton, Wis., has been incorporated with a capital stock of \$10,000 to engage in the general fabrication of plate and sheet steel, tanks, motor truck tank bodies, etc. The principals are G. A. Courtney, E. E. Femal and W. A. Van Ryzin.

The Murray Body Corporation, Detroit, which has purchased the H. & M. Body Corporation, Racine, Wis., from the Hupp Motor Car Co., contemplates using considerable of the unused capacity for the production of motor bus bodies. The present operation, namely the manufacture of inclosed bodies for the Hupmobile, will be transferred at once to Detroit. Only body construction was done in Racine, finishing operations being completed at Detroit, but equipment for complete body manufacture will be installed at Racine by the Murray company.

The Stoughton, Wis., Chamber of Commerce, which recently purchased for \$100,000 the local works of the Moline Plow Co., and disposed of a part of the plant to the Mid-West School Furniture Co. of Chicago, has now arranged with the Bradley-Roe Co., sash, doors and mill-work, Chicago, to occupy the wood shop, paint shop and storehouse. Negotiations are also under way with an unidentified foundry company for lease or purchase of the large gray iron foundry of the Moline plant.

P. J. Lavies & Co., 662 Washington Street, Milwaukee, manufacturers of sheet metal products, have changed the form to a corporation with a capital stock of \$20,000 under the title of P. J. Lavies Co. The ownership is unchanged, being vested in P. J. Lavies, S. A. Lavies and A. A. Moersch. Plans for enlarging the factory are being completed.

The Felker Brothers Mfg. Co., Marshfield, Wis., let the general contract to Krasin Brothers, local builders, for a one-story brick and concrete addition, 64 x 75 ft., for the production of motor truck tank bodies, mechanical hoists, etc. A. G. Felker is president and general manager.

St. Louis

ST. LOUIS, June 8.

CONTRACT has been let by the Multiplex Faucet Co., 2126 Cass Avenue, St. Louis, to Thomas A. O'Keefe, 4450 Margaretta Avenue, for the erection of its one and two-story plant, to cost about \$42,000. William P. McMahon, Buder Building, is architect. J. M. Travis is president.

The Kansas Power & Light Co., Topeka, Kan., operated by the Kansas Public Service Co., is disposing of a bond issue of \$2,100,000, a portion of the proceeds to be used for extensions and improvements, including a steam-operated electric generating plant at Tecumseh, Kan., now under way, designed for an initial capacity of 15,000 kva., and ultimate output of 90,000 kva.

The Goldberg & Sons Structural Steel Co., 800 East Eighteenth Street, St. Louis, has awarded a general contract to S. Patti, Jenkins Building, for a one-story addition to its plant, 80 x 180 ft., estimated to cost \$30,000.

The Capitol City Casket Co., 604 East Markham Street, Little Rock, Ark., has awarded a general contract to Jenkins & Appie, Inc., Little Rock, for the construction of a three-story plant, 75 x 160 ft., estimated to cost \$30,000.

The Arkansas Light & Power Co., Russellville, Ark., plans to rebuild its local power plant, recently partially destroyed by fire. An official estimate of loss has not been announced.

The Independent Oil & Gas Co., Okmulgee, Okla., has acquired the refining plant of the Allied Refining Co., for \$350,000. The new owner plans to operate the unit for the production of lubricating and other oils and contemplates extensions.

Johnson Brothers, Ardmore, Okla., will erect a new cold storage plant, estimated to cost \$75,000 with equipment. J. B. White, Ardmore, is architect.

J. G. Braechlein, Kresge Building, Kansas City, Kan., architect, has plans for a one-story and basement automobile service, repair and garage building, 62 x 125 ft., to cost about \$55,000.

The Marland Oil Co., Ponca City, Okla., has plans under way for enlargements in its local refinery to double the present capacity, to cost \$80,000 with equipment.

The Clinton Ice & Cold Storage Co., Clinton, Mo., will erect a new one-story cold storage and refrigerating plant and make improvements in the present works. Clifford H. Johnson, Citizens' National Bank Building, Sedalia, Mo., is architect and engineer.

S. E. Edwards, Massachusetts Building, Kansas City, Mo., architect, has completed plans for a two-story and basement automobile service, repair and garage building, 115 x 150 ft., to cost \$150,000, with equipment.

A bond issue of \$35,000 has been approved for extensions and improvements in the municipal electric light and power plant at Cherokee, Okla. Additional equipment will be installed.

W. E. Toler, Pawnee, Okla., has inquiries out for fuel economizer equipment and smoke consuming devices for power plant service.

The Ajax Mop Wringer Co., 115 Quincy Street, St. Louis, recently incorporated, will manufacture mop wringers, and has a small plant equipped for present needs. Some expansion is contemplated, but it is undecided whether to enlarge the plant or have the additional work done by contract. It will be in the market for materials, including soft steel and malleable iron castings. Other lines, including domestic and janitor supplies will be added later. H. M. Doubrava is president.

The Stark Metal Works, Inc., 322 North Grand Boulevard, St. Louis, has been incorporated to manufacture automobile accessories, distribution to be handled through jobbers. It is planning to add several new lines later. O. G. Stark is president.

The Standard Steel Works, North Kansas City, Mo., will buy a new or used double-gear double crank press, capacity, stroke and die space equal to Bliss No. 10-62 in. or larger.

New England

Boston, June 8.

THE local machine tool market is more quiet than heretofore, and reports from Providence, Springfield and Connecticut cities indicate business is virtually at a standstill. A sale of a 500-lb. hammer to an Attleboro shop and a 10-ton crane to B. F. Perkins & Son, Holyoke, Mass., paper mill machinery, are the most important transactions reported for the past week. Inquiries have also fallen off and the few received recently concern single tools of comparatively low cost. The dullness is attributed in part to the lack of new plant developments in New England and to the recent hot weather which necessitated many machine shops to operate on reduced time.

One local house has just completed a thorough inspection of many cotton mill machine shops. It reports most of the shops working out-of-date machine tools and with little prospect of new business in this field, due to the depression in the cotton goods market. In past years cotton mills have been small but steady buyers of machine tools.

Improvements are necessary by the Electrical Products Mfg. Co., Sprague and Harrison Streets, Providence, R. I., as a result of a fire experienced by the company last week.

The city of Boston has awarded contract for the erection of a three-story Boys' Trade School, Parker and Ruggles Streets annex, to cost with equipment approximately \$326,302.

A small repair department will be maintained in a 106 x 107 ft. and 22 x 181 ft. garage to be erected by Ephraim Stone, 53 State Street, bids for which are being asked. S. S. Eisenberg, 46 Cornhill, Boston, is the architect.

Work has started on an addition and alterations to the power plant of the Rumford Falls Light & Power Co., Rumford, Me. Hardy & Ferguson, 200 Fifth Avenue, New York are the engineers.

Contract has been awarded for the erection of a two-story, 76 x 106 ft. manufacturing plant for the Eastern States Warehouse & Cold Storage Co., Springfield, Mass. Samuel Green Co., 293 Bridge Street, that city, are the architects.

The Prulesco Art Metal Co., 1153 Westminster Street, Providence, R. I., has been organized to manufacture metal novelties. Arthur F. Vaughn is one of the principals.

The North Terminal Corporation, Boston, has awarded contract to the Aberthaw Co., Boston, for a three-story garage, 225 x 300 ft., at an estimated cost of \$500,000.

John Folsom, Dover, Me., and associates, are in the market for wood-working machinery, transmission and conveying equipment for a proposed wood-working and lumber mill.

The Air Reduction Sales Co., 123 Mount Vernon Street, South Boston, manufacturer of acetylene cutting and welding apparatus, has taken bids on a general contract for a one-story addition, including improvements in the present plant. Francisco & Jacobus, 511 Fifth Avenue, New York, are architects. Headquarters of the company are at 342 Madison Avenue, New York.

A reorganization committee of creditors of the Electric Cable Co., Bridgeport, Conn., has acquired the plant and property of the company on a bid of \$1,430,024. Plans will be completed for the formation of a new company and the resumption of operation at the plant.

The Watertown Mfg. Co., Watertown, Conn., manufacturer of insulators, etc., is planning for an addition to its main building. A new power house will also be built.

Fletcher-Thompson, Inc., Bridgeport, Conn., is architect and engineer.

B. F. Perkins & Son, Inc., Holyoke, Mass., manufacturer of machinery and parts, will erect two one-story buildings, 80 x 260 ft. and 80 x 150 ft., at Willimansett, Mass., for machine work, parts and assembling. Lockwood, Greene & Co., 24 Federal Street, Boston, are architects and engineers.

The Turners Supply Co., 88 Wheatland Street, Somerville, Mass., will build a one-story addition to its machine shop and install additional equipment.

The Sulloway Mills, Inc., Franklin, N. H., operating a local knitting mill, is completing plans for the installation of a hydroelectric generating station, using a power site formerly held by the International Paper Co.

The United Electric Light Co., Springfield, Mass., will erect a one-story automatic power station, 51 x 166 ft., to cost approximately \$100,000 with equipment. McClintock & Craig, Springfield, are architects.

The Ideal Auto Sheet Metal Works, 146 Windsor Avenue, Hartford, Conn., has plans for a one-story addition and the installation of additional equipment.

The McCathron Boiler Works, Inc., 72 Knowlton Street, Bridgeport, Conn., will soon begin the erection of a new one-story structural shop, 100 x 130 ft., for considerable increase in production.

Bird & Sons, Inc., East Walpole, Mass., manufacturer of prepared roofing, etc., has awarded a general contract to the Central Engineering Co., 218 Main Street, Pawtucket, R. I., for a one-story addition at Norwood, Mass., to cost \$45,000.

The Eastern States Warehousing & Cold Storage Co., Springfield, Mass., will erect a new two-story cold storage plant, 75 x 105 ft., to cost \$40,000. The Samuel M. Green Co., Springfield, is architect.

In connection with a new office and headquarters building at State and Benton Streets, Springfield, Mass., to cost \$2,830,000, the Massachusetts Mutual Life Insurance Co. will erect a mechanical service building on adjoining site, to cost about \$100,000 with equipment, and steam power plant to cost \$75,000.

The New England Power Co., Worcester, Mass., is considering plans for a new power house at Sherman, Vt., with initial capacity of about 20,000 hp. Work is under way on an addition to the generating plant at Davis Bridge, Vt., to include the installation of a new turbo-generator and necessary equipment.

Gulf States

BIRMINGHAM, June 8.

FIRE, May 30, destroyed a portion of the plant of the Martin-Parry Corporation, Hattiesburg, Miss., manufacturer of commercial automobile bodies, with loss reported at \$200,000, including equipment. It is planned to rebuild. Headquarters of the company are at York, Pa.

The H. Wetter Mfg. Co., Memphis, Tenn., manufacturer of cast iron pipe, stove castings, etc., has acquired the property of the former Gadsden Car Works, Gadsden, Ala., totaling about 30 acres, and plans to use about one-half of this area for a new foundry for the production of cast iron soil pipe. The initial works are reported to cost \$100,000 with equipment. It is proposed to remove the present foundry of this same character at South Pittsburg, Tenn., to the new location. Later, the remaining tract of land will be used for additional buildings for other branches of iron production. Henry Wetter is president.

The City Council, Palm City, Fla., has called a special election on June 27 to vote bonds for the construction of a municipal electric light and power plant, and municipal waterworks, the latter to include electric-operated pumping machinery and accessory apparatus. Riddle & Co., West Palm Beach, Fla., are engineers.

The Houston Electric Co., Houston, Tex., is disposing of a bond issue of \$5,000,000, a portion of the fund to be used for extensions and improvements, providing an appropriation for the construction requirements for the present year. C. F. W. Wetterer is president.

J. S. Poston, T. A. Franks and associates, Hamilton, Tex., have acquired the local mill of the Hamilton Cotton Oil Co., heretofore held by the Consumers' Oil Co., an interest of Swift & Co., Chicago. The new owners are organizing a company to operate the plant; extensions and betterments are contemplated, including additional equipment. Mr. Franks will be manager at the mill.

The Board of Bond Trustees, Deland, Fla., is asking bids until July 1, for equipment for municipal waterworks extensions, including deep-well pumping machinery and accessories, steel tank and tower; and for sewage pump-

Edgar Rice, Indianapolis, has leased property at 544 Indiana Avenue and will establish a machine shop and automobile parts and repair works.

The Ellettsville Water Co., Ellettsville, Ind., plans the installation of pumping machinery, steel tank and tower, and accessory equipment in connection with a proposed waterworks, estimated to cost \$45,000. Cole, Asire & Moore, J. M. S. Building, South Bend, Ind., are engineers and will make all equipment purchases.

The Hammond Brass Works, Inc., Hammond, Ind., plans to rebuild the portion of its works destroyed by fire May 30, with loss of \$75,000 including equipment. The plant of the Paxton Lumber Co., on adjoining site, was also destroyed, with loss of more than \$300,000 including machinery.

The Wabash Valley Electric Co., Clinton, Ind., has applied for permission to issue bonds for \$160,000 and stock for \$106,000, the proceeds to be used for extensions in power plants and systems.

Gerding & Aumann, 437 Wallace Street, Fort Wayne, Ind., operating a sheet metal and roofing works, have plans for a one and two-story addition, 75 x 115 ft., to cost approximately \$25,000. Charles R. Weatherhogg, 250 West Wayne Street, is architect.

The Calumet Gas & Electric Co., Gary, Ind., will issue bonds and stock in amount of \$1,000,000, a portion of the fund to be used for extensions and improvements in power plants and system. It will also take over a number of existing properties and will consolidate with its system.

The Elkhart-Buick Co., Elkhart, Ind., local representative for the Buick automobile, has plans for a one-story addition to its service, repair and garage building, 40 x 165 ft.

J. W. Campbell, Indianapolis, has leased property at 1514 Howard Street for a new metal-working and tin shop.

The Board of Education, Fort Wayne, Ind., plans the installation of manual training equipment in its proposed new North Side high school, estimated to cost \$750,000, for which it is expected to ask bids on a general contract early in August. Charles R. Weatherhogg, 250 West Wayne Street, is architect.

Milwaukee

MILWAUKEE, June 8.

AUTOMOTIVE business, while far from volume, nevertheless lends the greatest aspect of activity to machine tool business. Builders of milling machines are getting some fair orders, generally for one or two items at a time, and their operating schedules are well maintained. The demand is not nearly so active as a year ago, when considerable tooling was being done to step up output. The present effort is largely to replace obsolete or worn-out equipment rather than to provide increased capacity. The Chicago, Milwaukee & St. Paul Railway receivers are believed to be nearly ready to place orders for some important items for the West Milwaukee shops to handle a big locomotive and car reconstruction and reconditioning program, but details are still lacking.

The Continental Faience & Tile Co., Milwaukee, has been incorporated with \$75,000 capital stock and taken over the former plant of the Lawson Airplane Corporation in South Milwaukee which it will remodel and reequip for the production of fancy floor and wall tile. The building is 50 x 200 ft. E. P. Butler, 420 Milwaukee Street, Milwaukee, is president, and Carl Bergmans general manager.

The Ajax Auto Parts Co., Racine, Wis., is preparing to utilize more of the available area of the former Higgins Spring & Axle Co. works, which it acquired two years ago, and will soon be in the market for additional equipment for the production of automobile jacks and a line of stamped and forged parts and materials, as well as accessories. John W. Bate is president and general manager.

The Jefferson County, Wis., Asylum Trustees, Oscar F. Roessler, Jefferson, chairman, will remodel and enlarge the power and heating plant at an estimated cost of \$25,000. Three new boilers and some other equipment will be purchased. The work is in charge of Arthur Kuenzli, architect and consulting engineer, Watertown, Wis.

The Fox River Boiler Works, Appleton, Wis., has been incorporated with a capital stock of \$10,000 to engage in the general fabrication of plate and sheet steel, tanks, motor truck tank bodies, etc. The principals are G. A. Courtney, E. E. Femal and W. A. Van Ryzin.

The Murray Body Corporation, Detroit, which has purchased the H. & M. Body Corporation, Racine, Wis., from the Hupp Motor Car Co., contemplates using considerable of the unused capacity for the production of motor bus bodies. The present operation, namely the manufacture of inclosed bodies for the Hupmobile, will be transferred at once to Detroit. Only body construction was done in Racine, finishing operations being completed at Detroit, but equipment for complete body manufacture will be installed at Racine by the Murray company.

The Stoughton, Wis., Chamber of Commerce, which recently purchased for \$100,000 the local works of the Moline Plow Co., and disposed of a part of the plant to the Mid-West School Furniture Co. of Chicago, has now arranged with the Bradley-Roe Co., sash, doors and mill-work, Chicago, to occupy the wood shop, paint shop and storehouse. Negotiations are also under way with an unidentified foundry company for lease or purchase of the large gray iron foundry of the Moline plant.

P. J. Lavies & Co., 662 Washington Street, Milwaukee, manufacturers of sheet metal products, have changed the form to a corporation with a capital stock of \$20,000 under the title of P. J. Lavies Co. The ownership is unchanged, being vested in P. J. Lavies, S. A. Lavies and A. A. Moersch. Plans for enlarging the factory are being completed.

The Felker Brothers Mfg. Co., Marshfield, Wis., let the general contract to Krasin Brothers, local builders, for a one-story brick and concrete addition, 64 x 75 ft., for the production of motor truck tank bodies, mechanical hoists, etc. A. G. Felker is president and general manager.

St. Louis

ST. LOUIS, June 8.

CONTRACT has been let by the Multiplex Faucet Co., 2126 Cass Avenue, St. Louis, to Thomas A. O'Keefe, 4450 Margaretta Avenue, for the erection of its one and two-story plant, to cost about \$42,000. William P. McMahon, Buder Building, is architect. J. M. Travis is president.

The Kansas Power & Light Co., Topeka, Kan., operated by the Kansas Public Service Co., is disposing of a bond issue of \$2,100,000, a portion of the proceeds to be used for extensions and improvements, including a steam-operated electric generating plant at Tecumseh, Kan., now under way, designed for an initial capacity of 15,000 kva., and ultimate output of 90,000 kva.

The Goldberg & Sons Structural Steel Co., 800 East Eighteenth Street, St. Louis, has awarded a general contract to S. Patti, Jenkins Building, for a one-story addition to its plant, 80 x 180 ft., estimated to cost \$30,000.

The Capitol City Casket Co., 604 East Markham Street, Little Rock, Ark., has awarded a general contract to Jenkins & Apple, Inc., Little Rock, for the construction of a three-story plant, 75 x 160 ft., estimated to cost \$30,000.

The Arkansas Light & Power Co., Russellville, Ark., plans to rebuild its local power plant, recently partially destroyed by fire. An official estimate of loss has not been announced.

The Independent Oil & Gas Co., Okmulgee, Okla., has acquired the refining plant of the Allied Refining Co., for \$350,000. The new owner plans to operate the unit for the production of lubricating and other oils and contemplates extensions.

Johnson Brothers, Ardmore, Okla., will erect a new cold storage plant, estimated to cost \$75,000 with equipment. J. B. White, Ardmore, is architect.

J. G. Braechlein, Kresge Building, Kansas City, Kan., architect, has plans for a one-story and basement automobile service, repair and garage building, 62 x 125 ft., to cost about \$55,000.

The Marland Oil Co., Ponca City, Okla., has plans under way for enlargements in its local refinery to double the present capacity, to cost \$80,000 with equipment.

The Clinton Ice & Cold Storage Co., Clinton, Mo., will erect a new one-story cold storage and refrigerating plant and make improvements in the present works. Clifford H. Johnson, Citizens' National Bank Building, Sedalia, Mo., is architect and engineer.

S. E. Edwards, Massachusetts Building, Kansas City, Mo., architect, has completed plans for a two-story and basement automobile service, repair and garage building, 115 x 150 ft., to cost \$150,000, with equipment.

A bond issue of \$35,000 has been approved for extensions and improvements in the municipal electric light and power plant at Cherokee, Okla. Additional equipment will be installed.

W. E. Toler, Pawnee, Okla., has inquiries out for fuel economizer equipment and smoke consuming devices for power plant service.

The Ajax Mop Wringer Co., 115 Quincy Street, St. Louis, recently incorporated, will manufacture mop wringers, and has a small plant equipped for present needs. Some expansion is contemplated, but it is undecided whether to enlarge the plant or have the additional work done by contract. It will be in the market for materials, including soft steel and malleable iron castings. Other lines, including domestic and janitor supplies will be added later. H. M. Doubrava is president.

The Stark Metal Works, Inc., 322 North Grand Boulevard, St. Louis, has been incorporated to manufacture automobile accessories, distribution to be handled through jobbers. It is planning to add several new lines later. O. G. Stark is president.

The Standard Steel Works, North Kansas City, Mo., will buy a new or used double-gear double crank press, capacity, stroke and die space equal to Bliss No. 10-62 in. or larger.

New England

Boston, June 8.

THE local machine tool market is more quiet than heretofore, and reports from Providence, Springfield and Connecticut cities indicate business is virtually at a standstill. A sale of a 500-lb. hammer to an Attleboro shop and a 10-ton crane to B. F. Perkins & Son, Holyoke, Mass., paper mill machinery, are the most important transactions reported for the past week. Inquiries have also fallen off and the few received recently concern single tools of comparatively low cost. The dullness is attributed in part to the lack of new plant developments in New England and to the recent hot weather which necessitated many machine shops to operate on reduced time.

One local house has just completed a thorough inspection of many cotton mill machine shops. It reports most of the shops working out-of-date machine tools and with little prospect of new business in this field, due to the depression in the cotton goods market. In past years cotton mills have been small but steady buyers of machine tools.

Improvements are necessary by the Electrical Products Mfg. Co., Sprague and Harrison Streets, Providence, R. I., as a result of a fire experienced by the company last week.

The city of Boston has awarded contract for the erection of a three-story Boys' Trade School, Parker and Ruggles Streets annex, to cost with equipment approximately \$326,302.

A small repair department will be maintained in a 106 x 107 ft. and 22 x 181 ft. garage to be erected by Ephraim Stone, 53 State Street, bids for which are being asked. S. S. Eisenberg, 46 Cornhill, Boston, is the architect.

Work has started on an addition and alterations to the power plant of the Rumford Falls Light & Power Co., Rumford, Me. Hardy & Ferguson, 200 Fifth Avenue, New York are the engineers.

Contract has been awarded for the erection of a two-story, 76 x 106 ft. manufacturing plant for the Eastern States Warehouse & Cold Storage Co., Springfield, Mass. Samuel Green Co., 293 Bridge Street, that city, are the architects.

The Prulesco Art Metal Co., 1153 Westminster Street, Providence, R. I., has been organized to manufacture metal novelties. Arthur F. Vaugh is one of the principals.

The North Terminal Corporation, Boston, has awarded contract to the Aberthaw Co., Boston, for a three-story garage, 225 x 300 ft., at an estimated cost of \$500,000.

John Folsom, Dover, Me., and associates, are in the market for wood-working machinery, transmission and conveying equipment for a proposed wood-working and lumber mill.

The Air Reduction Sales Co., 123 Mount Vernon Street, South Boston, manufacturer of acetylene cutting and welding apparatus, has taken bids on a general contract for a one-story addition, including improvements in the present plant. Francisco & Jacobus, 511 Fifth Avenue, New York, are architects. Headquarters of the company are at 342 Madison Avenue, New York.

A reorganization committee of creditors of the Electric Cable Co., Bridgeport, Conn., has acquired the plant and property of the company on a bid of \$1,430,024. Plans will be completed for the formation of a new company and the resumption of operation at the plant.

The Watertown Mfg. Co., Watertown, Conn., manufacturer of insulators, etc., is planning for an addition to its main building. A new power house will also be built.

Fletcher-Thompson, Inc., Bridgeport, Conn., is architect and engineer.

B. F. Perkins & Son, Inc., Holyoke, Mass., manufacturer of machinery and parts, will erect two one-story buildings, 80 x 260 ft. and 80 x 150 ft., at Willimansett, Mass., for machine work, parts and assembling. Lockwood, Greene & Co., 24 Federal Street, Boston, are architects and engineers.

The Turners Supply Co., 88 Wheatland Street, Somerville, Mass., will build a one-story addition to its machine shop and install additional equipment.

The Sulloway Mills, Inc., Franklin, N. H., operating a local knitting mill, is completing plans for the installation of a hydroelectric generating station, using a power site formerly held by the International Paper Co.

The United Electric Light Co., Springfield, Mass., will erect a one-story automatic power station, 51 x 146 ft., to cost approximately \$100,000 with equipment. McClintock & Craig, Springfield, are architects.

The Ideal Auto Sheet Metal Works, 146 Windsor Avenue, Hartford, Conn., has plans for a one-story addition and the installation of additional equipment.

The McCathron Roller Works, Inc., 72 Knowlton Street, Bridgeport, Conn., will soon begin the erection of a new one-story structural shop, 100 x 120 ft., for considerable increase in production.

Bird & Sons, Inc., East Walpole, Mass., manufacturer of prepared roofing, etc., has awarded a general contract to the Central Engineering Co., 218 Main Street, Pawtucket, R. I., for a one-story addition at Norwood, Mass., to cost \$45,000.

The Eastern States Warehousing & Cold Storage Co., Springfield, Mass., will erect a new two-story cold storage plant, 75 x 105 ft., to cost \$40,000. The Samuel M. Green Co., Springfield, is architect.

In connection with a new office and headquarters building at State and Benton Streets, Springfield, Mass., to cost \$2,830,000, the Massachusetts Mutual Life Insurance Co. will erect a mechanical service building on adjoining site, to cost about \$100,000 with equipment, and steam power plant to cost \$75,000.

The New England Power Co., Worcester, Mass., is considering plans for a new power house at Sherman, Vt., with initial capacity of about 20,000 hp. Work is under way on an addition to the generating plant at Davis Bridge, Vt., to include the installation of a new turbo-generator and accessory equipment.

Gulf States

BIRMINGHAM, June 8.

FIRE, May 30, destroyed a portion of the plant of the Martin-Parry Corporation, Hattiesburg, Miss., manufacturer of commercial automobile bodies, with loss reported at \$200,000, including equipment. It is planned to rebuild. Headquarters of the company are at York, Pa.

The H. Wetter Mfg. Co., Memphis, Tenn., manufacturer of cast iron pipe, stove castings, etc., has acquired the property of the former Gadsden Car Works, Gadsden, Ala., totaling about 30 acres, and plans to use about one-half of this area for a new foundry for the production of cast iron soil pipe. The initial works are reported to cost \$100,000 with equipment. It is proposed to remove the present foundry of this same character at South Pittsburg, Tenn., to the new location. Later, the remaining tract of land will be used for additional buildings for other branches of iron production. Henry Wetter is president.

The City Council, Palm City, Fla., has called a special election on June 27 to vote bonds for the construction of a municipal electric light and power plant, and municipal waterworks, the latter to include electric-operated pumping machinery and accessory apparatus. Riddle & Co., West Palm Beach, Fla., are engineers.

The Houston Electric Co., Houston, Tex., is disposing of a bond issue of \$5,000,000, a portion of the fund to be used for extensions and improvements, providing an appropriation for the construction requirements for the present year. C. F. W. Wetterer is president.

J. S. Poston, T. A. Franks and associates, Hamilton, Tex., have acquired the local mill of the Hamilton Cotton Oil Co., heretofore held by the Consumers' Oil Co., an interest of Swift & Co., Chicago. The new owners are organizing a company to operate the plant; extensions and betterments are contemplated, including additional equipment. Mr. Franks will be manager at the mill.

The Board of Bond Trustees, Deland, Fla., is asking bids until July 1, for equipment for municipal waterworks extensions, including deep-well pumping machinery and accessories, steel tank and tower; and for sewage pump-

ing station equipment for sewer system. The J. B. McCrary Engineering Corporation, Atlanta, Ga., is engineer.

The Bureau of Yards and Docks, Navy Department, Washington, will receive bids until June 22 for two 90,000-gal. steel tanks, with floating roofs, etc., for the naval station at Pensacola, Fla., specification 5083.

George P. Lippencott, Dallas, Tex., has leased a portion of the Cox Building on St. Paul Street, and will establish a plant for the manufacture of electric batteries. A battery repair works will also be operated. Mr. Lippencott was formerly in charge of the plant of the O. K. Battery Co., Oak Cliff, Tex.

Robert Gambill, Graham Building, Jacksonville, Fla., and associates have acquired property at Northwood and in Sunshine Park, both near the city, and have preliminary plans for a new ice-manufacturing plant on each site, to cost in excess of \$225,000 each. Albert M. Dixon, 3402 Abercorn Street, Savannah, Ga., is interested in the project.

The State Board of Control, Austin, Tex., is asking bids until June 22 for 1,060,000 metal automobile license plates, the contract being under the direction of the State Highway Department.

The American Sanitary Engineering Co., Tampa, Fla., has tentative plans for the establishment of a new factory at Fort Lauderdale, Fla., for the manufacture of septic tanks and kindred products, to cost \$35,000 with equipment.

The Stewart-Martin Construction Co., 136 North Brickell Avenue, Fort Lauderdale, Fla., is in the market for a stiff-leg derrick, one rip and one cut-off saw, gasoline hoist, concrete mixer, steel body wheelbarrows and other tools and equipment.

The San Antonio Public Service Co., San Antonio, Tex., has arranged for an increase in stock from \$7,000,000 to \$10,000,000, a portion of the proceeds to be used for extensions in power plants and system and the acquisition of additional properties.

The City Council, Fort Lauderdale, Fla., plans the installation of pumping equipment in connection with proposed extensions and improvements in the municipal waterworks, to cost about \$200,000. Bonds will be arranged.

The Mirando City Oil Co., Mirando City, Tex., is reported to be planning the construction of a new refinery to cost approximately \$200,000 with equipment.

Fire, May 31, destroyed a portion of the plant of the Automotive Electric Co., 913-19 South Ervay Street, South Dallas, Tex., manufacturer of radio apparatus, automobile ignition equipment, etc., with loss of \$30,000 including equipment. Pending reconstruction, the business will be resumed in another location. George W. Goodwin is head.

Pacific Coast

SAN FRANCISCO, June 3.

PLANs have been authorized by the United Oil Co., Los Angeles, for enlargements in its Richfield refinery, with extensions in pipe lines, terminal facilities at Los Angeles Harbor, with additional storage and distributing equipment. A portion of a \$5,000,000 bond issue will be used to carry out the work.

Robert B. Muir, 2765 Steinar Street, San Francisco, and associates have applied for permission to use waters from Bucks and Grizzly Creeks, Plumas County, for a proposed hydroelectric power development, with initial installation to approximate 47,700 hp. The project will cost \$500,000.

The East Bay Municipal Utility District, 1924 Broadway, Oakland, Cal., John H. Kimball, secretary, is asking bids until July 20 for a pumping plant, with pumping units and accessory machinery, in connection with a storage reservoir and aqueduct project.

The Imperial Ice & Development Co., Calexico, Cal., is considering the erection of a new ice manufacturing plant at Calipatria, Cal., to cost \$100,000 with machinery.

The City Council, Santa Ana, Cal., plans the installation of pumping machinery and auxiliary equipment in connection with extensions and improvements in the municipal waterworks, for which a bond issue of \$1,206,000 will be arranged.

The Carlson Mill Co., Mineral, Wash., has authorized the immediate rebuilding of its saw mill and lumber plant, recently partially destroyed by fire, with loss approximating \$50,000 including equipment.

The Standard Gypsum Co., Alaska Building, Seattle, has awarded a general contract to the H. H. Winner Co., San Francisco, for a new mill at 1871 Sixteenth Avenue, South West, estimated to cost \$75,000.

The Great Western Power Co. of California, 530 Bush Street, San Francisco, has issued bonds for \$6,300,000, a

portion of the proceeds to be used for extensions in power plants and system.

The Tucson Gas, Electric Light & Power Co., Tucson, Ariz., is planning for the installation of a new water cooling system at its power plant, estimated to cost \$25,000.

The Covina Union High School District, Covina, Cal., has awarded a general contract to Nigg Brothers, Covina, for a one-story manual training shop, 75 x 185 ft., to cost \$32,000 exclusive of equipment.

The Willys-Overland Co., Toledo, Ohio, manufacturer of automobiles, has acquired property at Oakland, Cal., and is reported to be considering the construction of a factory branch and distributing plant, with cost placed in excess of \$350,000 for initial units.

Charles A. Giffen and O. E. Freeman, care of Haas & Dunnigan, 718 Citizens' National Bank Building, Los Angeles, have applied for permission to use waters from the North and East Forks of the Trinity River, Trinity County, for a proposed hydroelectric power development for mining, pumping and other service, estimated to cost \$5,000,000.

The construction of a 36-in. pipe line, installation of transformers and other electrical equipment, as well as mining machinery, is contemplated by the Mono Mining Co., Sweetwater, Nev., at its Green Creek properties.

The Los Angeles Machine Works has signed a long-term lease for additional quarters at 316 Azusa Street, Los Angeles, Cal., doubling its floor space. Several lathes, punch presses and drilling equipment have been installed. About 75 per cent of the plant's output of metal products is shipped to Eastern markets, using the low water rates through the Panama Canal.

Canada

TORONTO, June 3.

THE general trend of machine tool buying is toward one or two units to a customer with no large sales reported for the week. Buyers are confining purchases chiefly to production tools and those of a labor and time-saving nature. The demand for steel working equipment has fallen off slightly but wood-working tools are in good demand. New construction work is very low for this season of the year.

The MacDonald Thresher Co., Stratford, Ont., is in the market for a gap lathe, 48-in. swing or over, with 10 or 12 ft. bed.

The Hookless Fastener Co., Meadville, Pa., proposes to establish a manufacturing plant at St. Catharines, Ont., to cost \$75,000.

Heintzman Co., Ltd., 195 Yonge Street, Toronto, manufacturer of pianos, musical instruments, etc., will build an addition to its factory at Windsor, Ont.

Cap de la Madeleine, Que., will install a waterworks pumping plant to cost \$10,000, for which bids will be called about the end of this month. Romeo Morrisette is engineer.

Markdale, Ont., will install a sewage plant and is interested in prices on pumps and other equipment.

The Montreal Dry Dock Co., Ltd., Montreal, will build a new drydock larger than the existing one, which will embody the most modern ideas and methods of construction.

Western Canada

The Armstrong Morrison Co., Bower Building, Vancouver, B. C., has the general contract for construction of \$400,000 paper machine room and \$60,000 screen room for the Powell River Co., Powell River, B. C.

The city clerk, Revelstoke, B. C., will soon call for bids for the construction and equipment of an auxiliary steam power plant, also for improvements to an existing hydro power plant.

Arrangements have been completed and a plant will be established on Granville Island, Vancouver, B. C., for the manufacture of bolts, nuts, etc. The new company will operate under the name of the Pacific Bolt Mfg. Co., with a capital stock of \$20,000 and will take over and enlarge the plant formerly operated by the Shore Nut & Bolt Works. All the requirements for western Canada railroads for spikes will be supplied by the new works. E. B. Clegg, who recently arrived in Vancouver from England and C. D. Hobbs of Vancouver, are interested in the new undertaking.

The Utah-Idaho Sugar Co. is building a factory at Raymond, Alta. It will be operated under the name of the Canadian Sugar Factories, Ltd., and according to present plans is but the first of a number of similar plants to be established in Canada. T. George Wood, formerly purchasing agent with the parent company has been appointed district manager for Canada of the subsidiary.

Foreign

THE Foundation Co., 120 Liberty Street, New York, has secured a contract from the To'o Electric Co., Japan, for foundations and kindred work for a proposed super-power steam-operated electric generating plant.

The Swedish Chamber of Commerce of the United States, 2 Broadway, New York, has received an inquiry (No. 86) from a company in Sweden desiring to get in touch with American manufacturers of mechanical rubber belting.

The Compania de Riegos y Fuerze del Ebro, Barcelona, Spain, has selected a site on the River Ebro, near Mequinenza, for a proposed power dam and hydroelectric generating plant and will begin work on the project in the near future. It is estimated to cost in excess of \$1,500,000 with machinery.

The Foreign Trade Bureau, Philadelphia Commercial

Museum, Philadelphia, has received the following inquiries: (43642) from Permisherinath Kaul & Co., Srinagar, Kashmir, India, in the market for iron wire nails (2 to 6 in. long), corrugated tin sheets, plain tin sheets, electric lamps, etc.; (43647) from Th. Besson, Jeremie, Haiti, in the market for baking machinery, particularly machines for making bread; (43624) from the Globe Trading Co., Ltd., Plouton Street 1, Athens, Greece, desiring to get in contact with American manufacturers of paper-making machinery, nails, tin plate, machinery for box manufacture, locks, rivets and kindred specialties; (43622) from the Yamato Trading Co., Ltd., 1 Irifuncho Rokuchome, Kyobashi, Tokyo, Japan, desiring to get in touch with American manufacturers of oil burners for heating, cooking, etc., particularly those suitable for use with low-grade oils; and from the W. F. Price Battery Supply Co., Inc., 2855-65 Ruth Street, Philadelphia, which has received an inquiry (43627) from James A. Dias, care of A. M. Yateem Brothers, Bahrain, Persian Gulf, in the market for an electric generator, driven by kerosene engine.

Industrial Finances

First quarter earnings of the Replogle Steel Co. brought net income to \$18,224 after depreciation, compared with net loss of \$183,049 in the March quarter of 1924. Current assets, with the cash item especially strong, were \$1,854,054, against current liabilities of \$691,547.

The Transue & Williams Steel Forging Corporation shows a net loss in the first quarter of \$22,062 after charges. This compares with profits of \$62,628 in the corresponding period last year. Gross sales in 1924 were \$954,242. Current assets as of March 31, 1925, were \$824,402, against current liabilities of \$191,770.

The Mystic Iron Works, Boston, has increased its capitalization from \$1,000,000 to \$2,000,000 and has sold for cash, at \$100 par, 10,000 additional shares of common stock. It is a subsidiary of the Massachusetts Gas Companies and is erecting a blast furnace at Everett, Mass.

Assets of the Henry Poppert & Son Co., Fond du Lac, Wis., manufacturer of die castings, steam pressure cookers, etc., will be offered for sale at public auction by George R. McIntosh, trustee, on May 14, at the plant. Claims amount to about \$20,000.

The United States Headlight & Mfg. Co., 2 Letchworth Street, Buffalo, has filed a petition in bankruptcy, listing liabilities at \$187,510 and assets of \$283,338. Henry J. Turner, 86 Elllicott Street, has been appointed receiver.

Directors of the M. A. Hanna Co., Cleveland, passed the quarterly dividend of 2 per cent on second preferred stock which is due at this time. Regular dividends for the quarter of \$1.75 on first preferred were declared. In its early statement for the quarter ended March 31, a deficit was shown of \$313,151, after depreciation, depletion, etc. Net operating loss for the period was \$104,178.

Directors of the Youngstown Sheet & Tube Co., Youngstown, have declared the regular quarterly dividends for the second quarter, of \$1 per share on common stock and \$1.75 on preferred, both payable June 30 to stock of record June 15.

Westinghouse Earnings

The Westinghouse Electric & Mfg. Co. did a greater gross business in the year ended March 31, than in the previous year by \$3,467,374, but sales expense increased \$7,235,785 and net manufacturing profits were \$3,768,411 less than in the previous year. Income from other sources rose by almost \$3,000,000, however, and with interest charges down almost \$100,000, net income was only \$800,939, less than in 1924.

Earnings of the company for the year ended March 31, compare as follows:

	1925	1924
Gross earnings	\$157,880,292	\$154,412,918
Cost of sales	144,242,065	137,006,280
Net mfg. profit	13,638,227	17,406,638
Other income	4,203,179	1,336,438
Gross income	17,841,406	18,743,076
Interest charges, etc.	2,517,042	2,617,773
Net for dividends	15,324,364	16,125,303

Industrial News Notes

The Northwest Engineering Co., manufacturer of cranes, draglines, shovels, etc., 28 East Jackson Boulevard, Chicago, has added a heat treating division to handle such parts as crawler pins, treads, tread link pins, horizontal reverse shaft and other shaft, bevel gears, etc.

The Pacific Steel Building Co., 2422 East Fifty-second Street, Los Angeles, Cal., was recently incorporated with \$25,000 capital stock and will continue a business in the

fabrication of portable steel service stations, of which it has built about 300 during the last two years. R. C. Barrie is one of the principals.

The Pekor Iron Works, Columbus, Ga., incorporated with \$25,000 capital stock, will manufacture a line of steam engines, steam engine governors, throttle valves, etc. It also does a general line of contract work and has been in business since 1892. R. B. Pekor is general manager.

The Carlross Well Supply Co., Memphis, Tenn., recently was incorporated with \$50,000 capital stock as jobber in pump machinery, well supplies, waterworks equipment, etc. It is interested in hearing from manufacturers who desire representation in this territory. Leslie Carlross, 1397 Tutwiler Street, heads the company.

The Plumber's Supply Co., 620 East Pennsylvania Street, Evansville, Ind., has been incorporated as jobber in plumbing and heating supplies. R. R. George is one of the principals.

The McCord Radiator & Mfg. Co. has acquired from the National Radiator & Mfg. Co., formerly a part of the National Can Co., the equipment and good will of its automobile radiator business. The National company supplies radiators for Paige, Jewett, Packard, Rickenbacker, Veile and other automobiles, and spiral tubing for heating radiators. These lines will be added to the activities of the McCord company, and operations will be transferred to the main plant of the purchaser. The McCord company has offered 30,000 shares of no par value stock for public subscription.

The Smith Hardware Co., Sioux Falls, S. D., has been organized to acquire the business of the Smith Hardware & Harness Co., whose business will be continued without change in management. E. S. Olsen, is one of the principals.

The Rochester Boiler & Tank Co., Rochester, N. Y., has been taken over by Roulan & Roberts, 217 North Water Street, and will be operated henceforth under the name of Roulan & Roberts.

Trade Changes

The American Oven & Machine Co., Chicago, has moved general offices and factory to its new building at 615 South California Avenue.

The Metal Sales Co., 511 Bergen Avenue, Jersey City, N. J., is the exclusive distributor of the bearing metal made by the Crilly Mercury Metal Corporation, Jersey City, N. J. While the Mutual Iron Works, Jersey City, mentioned in these columns previously, has sold considerable quantities of Crilly metal, its purchases were made directly from the Metal Sales Co.

The Iron Builders Corporation has removed its office from 350 Madison Avenue, New York, to 720 Pacific Street, Brooklyn.

The Pierce, Butler & Pierce Mfg. Co., New York, manufacturer of heating apparatus, has established a branch jobbing office in the Whitaker Building, Guilford Avenue and Saratoga Street, Baltimore, in charge of Alfred R. Springer.

The Cap Screw & Nut Co., 45 Lafayette Street, New York, has been appointed eastern representative for the Superior Screw & Bolt Mfg. Co., Cleveland, which manufactures a complete line of hexagon head cap screws, carriage bolts, machine bolts, lag screws, stove bolts, nuts, etc., full lines of which will be kept in stock by the Cap Screw & Nut Co.

Joseph T. Ryerson & Son, Chicago, have been appointed exclusive agents in the Chicago territory for Blacker hammers, manufactured by the Blacker Engineering Co., New York.

Current Metal Prices

On Small Lots, Delivered from Merchants' Stocks, New York City

The following quotations are made by New York City warehouses.

As there are many consumers whose requirements are not sufficiently heavy to warrant their placing orders with manufacturers for shipments in carload lots from mills, these prices are given for their convenience.

On a number of items the base price only is given, it being impossible to name every size.

The wholesale prices at which large lots are sold by manufacturers for direct shipment from mills are given in the market reports appearing in a preceding part of THE IRON AGE, under the general headings of "Iron and Steel Markets" and "Non-Ferrous Metals."

Bars, Shapes and Plates	Per Lb.
Bars:	
Refined iron bars, base price.....	3.24c.
Swedish charcoal iron bars, base....	7.09c. to 7.25c.
Soft steel bars, base price.....	3.24c.
Hoops, base price.....	4.49c.
Bands, base price.....	3.99c.
Beams and channels, angles and tees, 3 in. x ¼ in. and larger, base.....	3.34c.
Channels, angles and tees under 3 in. x ¼ in. base.....	3.24c.
Steel plates, ¼ in. and heavier.....	3.34c.

Merchant Steel	Per Lb.
Tire, 1½ x ¼ in. and larger.....	3.30c.
(Smooth finish, 1 to 2½ x ¼ in. and larger).....	3.65c.
Toe-calk, ½ x ¾ in. and larger.....	4.20c.
Cold-rolled strip, soft and quarter hard.....	7.00c.
Open-hearth spring steel.....	4.50c. to 7.00c.
Shafting and Screw Stock:	
Rounds and hex.....	4.15c.
Squares and flats.....	4.65c.
Standard tool steel, base price.....	15.00c.
Extra tool steel.....	18.00c.
Special tool steel.....	23.00c.
High-speed steel, 18 per cent tungsten.....	70c.

Blue Annealed	Per Lb.
No. 10.....	3.89c.
No. 12.....	3.94c.
No. 14.....	3.99c.
No. 16.....	4.09c.

Box Annealed—Black	Per Lb.
Nos. 18 to 20.....	4.15c. to 4.40c.
Nos. 22 and 24.....	4.20c. to 4.45c.
No. 26.....	4.25c. to 4.50c.
No. 28*.....	4.35c. to 4.60c.
No. 30.....	4.55c. to 4.80c.

Galvanized	Per Lb.
No. 14.....	4.45c. to 4.70c.
No. 16.....	4.60c. to 4.85c.
Nos. 18 and 20.....	4.75c. to 5.00c.
Nos. 22 and 24.....	4.90c. to 5.15c.
No. 26.....	5.05c. to 5.30c.
No. 28*.....	5.35c. to 5.60c.
No. 30.....	5.85c. to 6.10c.

*No. 28 lighter, 36 in. wide, 20c. higher per 100 lb.

Standard Weld	Black	Galv.	Wrought Iron	Black	Galv.
½ in. Butt....	46	29	½ in. Butt....	4	+19
¾ in. Butt....	51	37	¾ in. Butt....	11	+ 9
1-3 in. Butt....	53	39	1-1½ in. Butt. 14		+ 6
2½-6 in. Lap..	48	35	2-in. Lap. ...	5	+14
7 & 8 in. Lap..	44	17	3-6 in. Lap. 11		+ 6
11 & 12 in. Lap.	37	12	7-12 in. Lap.. 3		+16

Bolts and Screws	
Machine bolts, cut thread, 40 and 10 per cent off list	
Carriage bolts, cut thread, 30 and 10 per cent off list	
Coach screws, 40 and 10 per cent off list	
Wood screws, flat head iron,	
72½, 25, 10 and 5 per cent off list	

Steel Wire	Per Lb.
BASE PRICE* ON NO. 9 GAGE AND COARSER	
Bright, basic.....	4.25c.
Annealed, soft.....	4.50c.
Galvanized, annealed.....	5.15c.
Coppered, basic.....	5.15c.
Tinned, soft Bessemer.....	6.15c.

*Regular extras for lighter gage.

Brass Sheet, Rod, Tube and Wire	BASE PRICE
High brass sheet.....	18½c. to 19½c.
High brass wire.....	18½c. to 19½c.
Brass rods.....	15½c. to 16½c.
Brass tube, brazed.....	26½c. to 27½c.
Brass tube, seamless.....	22½c. to 23½c.
Copper tube, seamless.....	23½c. to 24½c.

Copper Sheets	
Sheet copper, hot rolled, 20½c. to 21½c. per lb. base.	
Cold rolled, 14 oz. and heavier, 3c. per lb. advance over hot rolled.	

Tin Plates	
Bright Tin	
Grade "AAA"	Grade "A"
Charcoal 14x20	Charcoal 14x20
IC.. \$11.25	\$8.85
IX.. 12.85	10.85
IXX.. 14.40	12.55
IXXX.. 15.75	13.85
IXXXX.. 17.00	15.05

Terne Plates	
8 lb. coating, 14 x 20	
100 lb.	\$7.00 to \$8.00
IC.....	7.25 to 8.25
IX.....	8.25 to 8.75
Fire door stock.....	9.00 to 10.00

Tin	
Straits, pig.....	60c.
Bar.....	62c. to 65c.

Copper	
Lake ingot.....	16½c.
Electrolytic.....	16½c.
Casting.....	16 c.

Spelter and Sheet Zinc	
Western spelter.....	9c.
Sheet zinc, No. 9 base, casks.....	12c. open 12½c.

Lead and Solder*	
American pig lead.....	10c. to 12½c.
Bar lead.....	13c.
Solder, ½ and ⅓ guaranteed.....	39½c.
No. 1 solder.....	36½c.
Refined solder.....	30c.

*Prices of solder indicated by private brand vary according to composition.

Babbitt Metal	
Best grade, per lb.....	75c. to 90c.
Commercial grade, per lb.....	35c. to 50c.
Grade D, per lb.....	25c. to 35c.

Antimony	
Asiatic.....	20c. to 21c.

Aluminum	
No. 1 aluminum (guaranteed over 99 per cent pure), in ingots for remelting, per lb.....	38c.

Old Metals
The market continues sluggish and values are the same as last week. Dealers' buying prices are as follows:

	Cents Per Lb.
Copper, heavy crucible.....	11.50
Copper, heavy wire.....	11.00
Copper, light bottoms.....	9.25
Brass, heavy.....	6.75
Brass, light.....	5.75
Heavy machine composition.....	8.75
No. 1 yellow brass turnings.....	8.00
No. 1 red brass or composition turnings.....	8.00
Lead, heavy.....	7.50
Lead, tea.....	5.75
Zinc.....	4.00
Cast aluminum.....	17.00
Sheet aluminum.....	17.00